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1888

PUBLIC HEALTH  
REPORT  
OF THE  
CITY OF PITTSBURGH  

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1880 — 1887

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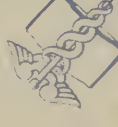


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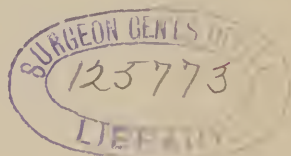
PUBLIC  
HEALTH  
REPORT,

—OF THE—

City of Pittsburgh.

Board of Health  
—FOR THE YEARS—

1880--87.



PITTSBURGH, PA.:

PRESS OF BEST & CO., 207 WOOD STREET.

WA

P691 P

1888

Film# 3203, no. 2 .

# DEPARTMENT OF HEALTH,

*Pittsburgh, February 1st, 1881.*

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## PUBLIC HEALTH REPORT FOR THE YEAR 1880.

—————§§§§§§—————

*To the Board of Health.*

GENTLEMEN:—The total number of deaths was 3,410, equal to a death rate of 21.8 per 1,000. (Population per U. S. Census, 156,381.)

There were 828 deaths of infants under one year, and 789 of children between the ages of one and five years, making 47 per cent. of the total.

Of the decedents, 808 were of Foreign, and 2,602 of Native birth; of the latter number, 150 were colored.

Infectious diseases caused 972 deaths, making 28.5 per cent. of the total from all causes, or 6 per 1,000 inhabitants.

### Report of Infectious Diseases for the Year 1880.

DISEASES.	*Cases Reported.	Deaths.
Measles.....	24	89
Whooping Cough.....	0	102
Diphtheria.....	271	311
Smallpox.....	4	0
Scarlet Fever.....	118	220
Typhoid Fever.....	432	211
Cerebro spinal Fever.....	11	19
Other diseases of this class.....	0	20
Total.....	860	972

\* Incomplete, with exception of Smallpox.



*Measles* prevailed most extensively during the second or spring quarter. Of the 89 deaths from this cause, 13 occurred during the first quarter, 49 during the second quarter, 22 during the third quarter, and 5 during the fourth quarter.

*Whooping Cough* prevailed most extensively during the first or winter quarter. Of the 102 deaths from this cause, 46 occurred during the first quarter, 34 during the second quarter, 17 during the third quarter, and 5 during the fourth quarter.

*Diphtheria* prevailed most extensively during the fourth or autumnal quarter. Of the 311 deaths from this cause, 88 occurred during the first quarter, 43 during the second quarter, 89 during the third quarter, and 91 during the fourth quarter.

*Smallpox.* No deaths occurred from this cause during the year, and but 4 cases were reported.

*Scarlet Fever* prevailed most extensively during the fourth or autumnal quarter. Of the 220 deaths from this cause, 42 occurred during the first quarter, 43 during the second quarter, 28 during the third quarter, and 107 during the fourth quarter.

*Typhoid Fever* prevailed most extensively during the second or spring quarter. Of the 211 deaths from this cause, 48 occurred during the first quarter, 82 during the second quarter, 47 during the third quarter, and 34 during the fourth quarter.

During the months of February, March, and April, it prevailed extensively in the upper South Side wards, and is believed to have been due to the extensive use of well water. It is known that the wells throughout this district were freely resorted to during this period as being preferable to the water supplied from the Monongahela river, muddied as it was by heavy rains.

The mortality from Infectious Diseases was located as follows:

Old City (First to Twelfth Wards, inclusive).....	254
East End (Thirteenth to Twenty-third Wards, inclusive) .....	285
South Side (Twenty-fourth to Thirty-sixth Wards, inclusive)...	409
Hospitals and Public Institutions.....	24

In addition to the above the principal causes of death were Consumption, which caused 314 deaths, equal to 9.2+ per cent. of the total mortality.



Pneumonia, which caused 203 deaths, equal to 6 per cent. of the total mortality.

Bronchitis, (Acute and Chronic and Bronchial Catarrh) which caused 92 deaths, equal to 2.7 per cent of the total mortality.

Diarrhœal Diseases, (including simple Diarrhœa, 175; Choleraic Diarrhœa, 58; Dysentery, 21; Cholera-morbus, 9) which caused 263 deaths, equal to 7.7 per cent. of the total mortality.

Violence, which caused (including Suicide, 15; Homicide, 7; Intemperance, 34; Drowning, 17; Railroad Injuries, 64; Burns and Scalds, 29; Falls, 11, and other forms of Violence, 62), a total of 239 deaths, equal to 7 per cent. of the total mortality.

The social relations of the 3,410 decedents were as follows:

Single.....	2,419
Married.....	810
Widows.....	113
Widowers.....	49
Not stated.....	19
Total.....	3,410

The following statement shows the nativity of the decedents:

Pittsburgh.....	2,056
United States.....	530
Ireland.....	344
Germany.....	320
England.....	62
Wales.....	25
Scotland.....	16
France.....	10
Canada.....	9
Switzerland.....	6
Poland.....	6
Italy.....	4
Austria.....	2
Belgium.....	2
Russia.....	1
China.....	1
Not stated.....	16
Total.....	3,410

The following statement exhibits the ages of the 3,410 decedents :

Under one year.....	828
One year.....	374
Two years .....	415
Five years .....	292
Ten years.....	212
Twenty years.....	294
Thirty years.....	259
Forty years.....	185
Fifty years.....	188
Sixty years.....	161
Seventy years.....	135
Eighty years.....	53
Ninety years.....	13
One hundred years.....	1
Total.....	3,410

The location of the decedents was as follows:

City Wards.....	3,226
West Penn Hospital.....	86
Mercy Hospital.....	35
St. Francisus Hospital.....	19
Homœopathic Hospital.....	17
Pittsburgh Infirmary.....	11
Orphan Asylum.....	5
Central Station.....	2
Found in Rivers.....	9
Total.....	3,410

#### \* MARRIAGES.

There were reported to this Office during the year 1,492 marriages, equal to 9.5 per 1,000 inhabitants.

#### \* BIRTHS.

There were reported to this Office during the year, 4,756 births, equal to 30.4 per 1,000 inhabitants.

The number of still-births reported during the year was 284, an increase of 18 as compared with the previous year.

Respectfully submitted,

W. SNIVELY, M. D.,

*Registrar.*

# DEPARTMENT OF HEALTH,

*Pittsburgh, February 1st, 1882.*

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## PUBLIC HEALTH REPORT FOR THE YEAR 1881.

—————§§§§§§—————

*To the Board of Health.*

\* GENTLEMEN:—The total number of deaths was 4,493, equal to a death rate of 27 per 1,000 inhabitants. (Population estimated, 165,000).

There were 1,032 deaths of infants, under one year, and 1,100 of children, between the ages of one and five years, making 47 per cent. of the total.

Of the decedents 1,161 were of Foreign, and 3,332 of Native birth. Of the latter number, 186 were colored.

Infectious Diseases caused 1,518 deaths, equal to 33.8 per cent. of the total mortality, or 9 per 1,000 inhabitants.

### Report of Infectious Diseases for the Year 1881.

DISEASES.	*Cases Reported.	Deaths.
Measles.....	2	46
Whooping Cough .....	0	37
Diphtheria.....	103	210
Smallpox.....	1,578	448
Scarlet Fever.....	202	382
Typhoid Fever.....	90	248
Cerebro-spinal Fever.....	19	110
Other diseases of this class....	0	37
Total.....	1,994	1,518

\* Incomplete with exception of Smallpox.

*Measles* prevailed most extensively during the third or summer quarter. Of the 46 deaths from this cause, 4 occurred during the first quarter, 12 during the second quarter, 24 during the third quarter, and 6 during the fourth quarter.

*Whooping Cough.* The deaths from this cause were below the average. It caused 12 deaths during the first quarter, 5 during the second, 13 during the third, and 7 during the fourth, a total of 37.

*Diphtheria* prevailed most extensively during the third or summer quarter. Of the 210 deaths from this cause, 41 occurred during the first, 43 during the second, 69 during the third, and 57 during the fourth quarter.

*Smallpox.* The mortality from this cause was confined almost exclusively to the latter half of the year. Of the 448 deaths from this cause, 8 occurred during the first, 18 during the second, 135 during the third, and 287 during the fourth quarter.

*Scarlet Fever.* The mortality from this cause was in excess of the average. It caused 382 deaths, of which number, 118 were in the first quarter, 115 in the second quarter, 83 in the third quarter, and 66 in the fourth quarter.

*Typhoid Fever* prevailed most extensively during the third or summer quarter. Of the 248 deaths from this cause, 30 occurred during the first quarter, 38 during the second, 96 during the third, and 84 during the fourth quarter.

*Cerebro-spinal Fever* prevailed more extensively than usual, causing 110 deaths, 6 occurred in the first, 80 in the second, 14 in the third, and 10 in the fourth quarter.

The mortality from Infectious Diseases was located as follows:

Old City (First to Twelfth Wards, inclusive).....	500
East End (Thirteenth to Twenty-third Wards, inclusive).....	393
South Side (Twenty-fourth to Thirty-sixth Wards, inclusive)...	458
Hospitals and Public Institutions.....	167

In addition to the above, the principal causes of death were Consumption, which caused 349 deaths, equal to 7.8 per cent. of the total mortality.

*Pneumonia*, which caused 221 deaths, equal to 4.9 per cent. of the total mortality.

*Bronchitis*, (Acute and Chronic and Bronchial Catarrh) which caused 71 deaths, equal to 1.5 per cent. of the total mortality.

*Diarrhœal Diseases*, which caused (including simple Diarrhœa, 265; Choleraic Diarrhœa, 106; Dysentery, 22, and Cholera-norbis, 17), a total of 410 deaths, equal to 9.1 per cent. of the total mortality.

*Violence*, (including Suicide, 11; Homicide, 6; Intemperance, 87; Drowning, 29; Railroad Injuries, 65; Burns and Scalds, 39; Falls, 22, and other forms of Violence, 82), which caused 341 deaths, equal to 7.5 per cent. of the total mortality.

The social relations of the decedents were as follows:

Married .....	1,062
Single.....	3,209
Widows.....	126
Widowers.....	60
Not stated.....	36
Total.....	4,493

The following statement shows the nativity of the decedents:

Pittsburgh.....	2,570
United States.....	716
Canada .....	10
England.....	96
France.....	8
Germany.....	483
Ireland.....	452
Italy.....	3
Scotland.....	27
Wales.....	41
Norway.....	2
Sweden.....	9
Poland .....	13
Switzerland.....	9
Holland.....	2
Belgium .....	2
Austria.....	1
Russia.....	2
Greece .....	1
Nova Scotia.....	1
New Brunswick.....	2
Brazil.....	1
Not stated.....	42
Total.....	4,493

The following statement exhibits the ages of the decedents:

Under one year.....	1,032
One year .....	489
Two years.....	611
Five years.....	344
Ten years.....	283
Twenty years.....	433
Thirty years.....	348
Forty years.....	292
Fifty years.....	220
Sixty years.....	222
Seventy years .....	134
Eighty years.....	72
Ninety years.....	12
One hundred years.....	1

Total.....4,493

The location of the decedents was as follows:

City Wards.....	4,098
West Penn Hospital.....	113
Mercy Hospital.....	40
Pittsburgh Infirmary.....	32
St. Francis Hospital.....	51
Homœopathic Hospital.....	53
Municipal Hospital.....	81
Orphan Asylum.....	1
County Jail.....	3
Central Station .....	3
Home Hotel.....	1
Found in Rivers.....	17

Total.....4,493

#### \*MARRIAGES.

There were reported to this Office during the year, 1,782 marriages, equal to 11 per 1,000 inhabitants.

#### \*BIRTHS.

There were reported to this Office during the year, 4,197 births, equal to 25 per 1,000 inhabitants.

#### STILL-BIRTHS.

There were reported to this Office during the year, 298 stillbirths.

Respectfully submitted,

W. SNIVELY, M. D.,

*Registrar.*

\*Incomplete.

# DEPARTMENT OF HEALTH,

*Pittsburgh, February 1st, 1883.*

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## PUBLIC HEALTH REPORT FOR THE YEAR

1882.

—————§§§§§§—————

*To the Board of Health.*

GENTLEMEN:—The total number of deaths was 4,090, equal to a death rate of 24 per 1,000. (Population, estimated, 170,000). There were 1,020 deaths of infants, under one year, and 866 of children, between the ages of one and five years, making 46 per cent. of the total.

Of the decedents, 1,224 were of Foreign, and 2,866 of Native birth. Of the latter number, 220 were colored.

Infectious Diseases caused 1,072 deaths, equal to 26.2 per cent. of the total mortality, or 6 per 1,000 inhabitants.

### Report of Infectious Diseases for the Year 1882.

DISEASES.	*Cases Reported.	Deaths.
Measles.....	854	91
Whooping Cough.....	7	96
Diphtheria.....	554	185
Smallpox.....	1,136	300
Scarlet Fever.....	234	63
Typhoid Fever.....	1,782	268
Cerebro spinal Fever.....	56	34
Other diseases of this class....	3	35
Total.....	4,626	1,072

\* Incomplete, with exception of Smallpox.



*Measles* prevailed most extensively during the second or spring quarter. Of the 91 deaths from this cause, 18 occurred during the first quarter, 40 during the second quarter, 26 during the third quarter, and 7 during the fourth quarter.

*Whooping Cough* prevailed most extensively during the third or summer quarter. Of the 96 deaths from this cause, 25 occurred during the first quarter, 23 during the second quarter, 33 during the third quarter, and 15 during the fourth quarter.

*Diphtheria* prevailed most extensively during the fourth or autumnal quarter. Of the 185 deaths from this cause, 26 occurred during the first quarter, 35 during the second quarter, 47 during the third quarter, and 77 during the fourth quarter.

*Smallpox.* The mortality from this cause was confined almost exclusively to the first six months of the year. Of the 300 deaths from this cause, 235 occurred during the first or winter quarter, 46 during the second quarter, 3 during the third quarter, and 16 during the fourth quarter.

*Scarlet Fever* prevailed most extensively during the first or winter quarter. Of the 63 deaths from this cause, 32 occurred during the first quarter, 13 during the second quarter, 10 during the third quarter, and 8 during the fourth quarter.

*Typhoid Fever* prevailed most extensively during the fourth or autumnal quarter. Of the 268 deaths from this cause, 59 occurred during the first quarter, 20 during the second quarter, 82 during the third quarter, and 107 during the fourth quarter. During the second half of the year, this disease presented some unusual features, more particularly during the period of invasion. The extremes of life would appear to have been peculiarly susceptible. More children and persons of advanced age were attacked than usual. Of the decedents, 15 were from one to five years of age; from five to ten years, 20; from ten to twenty years, 57; from twenty to fifty years, 157; from fifty to sixty years, 9; from sixty to seventy, 8; and two were over 70 years.

The mortality from Infectious Diseases was located as follows:

Old City (First to Twelfth Wards, inclusive).....	350
East End (Thirteenth to Twenty-third Wards, inclusive).....	258
South Side (Twenty-fourth to Thirty-sixth Wards, inclusive)...	318
Hospitals and Public Institutions.....	146

In addition to the above, the principal causes of death were Consumption, (including Phthisis Pulmonalis, 264; Miliary Tuberculosis, 49; and Pneumonic Phthisis, 3), which caused 316 deaths, equal to 7.7+ per cent. of the total mortality.

Pneumonia, which caused 306 deaths, equal to 7.4+ per cent. of the total mortality.

Bronchitis, (Acute and Chronic and Bronchial Catarrh) which caused 106 deaths, equal to 2.6 per cent of the total mortality.

Diarrhœal Diseases, (including simple Diarrhœa, 236; Choleraic Diarrhœa, 98; Dysentery, 30; and Cholera-morbus, 11), which caused 375 deaths, equal to 9.2 per cent. of the total mortality.

Violence, (including Suicide, 25; Homicide, 7; Intemperance, 75; Drowning, 32; Railroad Injuries, 71; Burns and Scalds, 24; Falls, 16, and other forms of Violence, 83), which caused 333 deaths, equal to 8.1 per cent. of the total mortality.

The social relations of the 4,090 decedents were as follows:

Married.....	1,064
Single.....	2,750
Widows.....	166
Widowers.....	59
Not stated.....	51
Total.....	4,090

The following statement shows the nativity of the decedents:

Pittsburgh.....	2,157
Other parts of United States.....	685
Canada.....	8
Nova Scotia.....	2
England.....	124
Ireland.....	455
Scotland.....	23
Wales.....	42
France.....	7
Germany.....	514
Switzerland.....	7
Austria.....	5
Denmark.....	1
Sweden.....	7

Russia.....	4
Poland.....	12
Italy.....	9
Greece.....	1
China.....	1
Atlantic Ocean.....	2
Not stated.....	24
Total.....	4,090

The following statement exhibits the ages of the 4,090 decedents:

Under one year.....	1,020
From one to two years.....	429
“ two to five years.....	437
“ five to ten years.....	212
“ ten to twenty years.....	223
“ twenty to thirty years.....	432
“ thirty to forty years.....	351
“ forty to fifty years.....	298
“ fifty to sixty years.....	210
“ sixty to seventy years.....	227
“ seventy to eighty years.....	162
“ eighty to ninety years.....	77
Over ninety years.....	12
Total.....	4,090

The location of the decedents was as follows:

City Wards.....	3,704
West Penn Hospital.....	129
Municipal Hospital.....	86
St. Francis Hospital.....	72
Mercy Hospital.....	60
Pittsburgh Infirmary.....	21
Homœopathic Hospital.....	3
Orphan Asylum.....	5
County Jail.....	4
Central Station.....	1
Children's Home.....	1
Found in Rivers.....	4

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**\* MARRIAGES.**

There were reported to this Office during the year 1,945 marriages, equal to 11.44 per 1,000 inhabitants.

**\* BIRTHS.**

There were reported to this Office during the year, 4,637 births, equal to 27.28 per 1,000 inhabitants.

**\* STILL-BIRTHS.**

There were reported to this Office during the year 280 stillbirths.

Respectfully submitted,

W. SNIVELY, M. D.,

*Registrar.*

\* Incomplete.



# DEPARTMENT OF HEALTH,

*Pittsburgh, February 1st, 1884.*

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## PUBLIC HEALTH REPORT FOR THE YEAR 1883.

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*To the Board of Health.*

GENTLEMEN:—The total number of deaths was 3,318, equal to a death rate of 19 per 1,000. (Population, estimated, 175,000). The death rate for the year was lower than for any year since the organization of the Health Department.

There were 803 deaths of infants, under one year, and 519 of children, between the ages of one and five years, making but 40 per cent. of the total mortality.

Of the decedents 1,093 were of Foreign, and 2,225 of Native birth. Of the latter number, 160 were colored.

Infectious Diseases caused 592 deaths, equal to 18 per cent. of the total mortality, or but 3.3 per 1,000 inhabitants.

During the month of May, an Act of Assembly was passed requiring all cases of small-pox, diphtheria, scarlet fever, typhoid fever, typhus fever, yellow fever, cerebro-spinal fever, and Asiatic cholera to be reported to this Department.

Of those required by law to be reported, the statement is as follows:

DISEASES.	Cases.	Deaths.	Per Cent.
Diphtheria.....	588	170	28.9
Smallpox.....	51	17	*33.3
Scarlet Fever.....	587	50	8.5
Typhoid Fever.....	1,442	188	13.0
Cerebro-spinal Fever.....	62	24	38.7

\* The post Vaccinal cases, or Varioloid, are included in this statement.

*Measles* prevailed most extensively during the third or summer quarter. The greatest mortality from this cause, was upon the South Side. It caused a total mortality of 42, four of which occurred in St. Paul's Orphan Asylum.

*Whooping Cough* prevailed most extensively during the first or winter quarter. It was confined to no particular district of the City. Of the 80 deaths from this cause, 40 occurred in the old City, 12 in the East End, and 28 on the South Side.

*Diphtheria*, following its custom of previous years, prevailed most extensively during the last or autumnal quarter of the year. Of the 170 deaths from this cause, 38 occurred during the first quarter, 25 during the second quarter, 36 during the third quarter, and 71 during the fourth quarter. As in former years, it caused the greatest mortality on the South Side, 80 deaths occurring in this district, 38 in the old City, (first twelve wards), and 52 in the East End, (Thirteenth to Twenty-third wards, inclusive).

*Smallpox* prevailed but moderately, as compared with former years. It was limited almost entirely to the first or winter quarter, and disappeared entirely before the end of the second quarter. Of the 17 deaths from this cause, 10 occurred in the Municipal Hospital.

*Scarlet Fever* of a mild type prevailed throughout the old City and East End, and to a slight extent upon the South Side. It was most prevalent during the latter six months of the year. Only 113 cases were reported, and but 19 deaths occurred during the first six months, while 474 cases were reported, and 31 deaths occurred during the latter six months of the year.

*Typhoid Fever* prevailed most extensively during the first or winter quarter. Of the 188 deaths from this cause, 89 occurred during the first quarter, 17 during the second quarter, 43 during the third quarter, and 39 during the fourth quarter.

It prevailed most severely upon the South Side, that district furnishing 581 cases and 72 deaths, the old City 304 cases and 40 deaths, and the East End 284 cases and 40 deaths; 36 deaths from this cause occurred in the Hospitals.

Of the decedents from this cause, 18 were under ten years of



age, 160 were between the ages of ten and fifty years, and 10 were over fifty years of age.

The mortality from Infectious Diseases was located as follows:

Old City (First to Twelfth Wards, inclusive).....	180
East End (Thirteenth to Twenty-third Wards, inclusive) .....	137
South Side (Twenty-fourth to Thirty-sixth Wards, inclusive)...	222
Hospitals and Public Institutions.....	53

The above figures show that the highest death rate from Infectious Diseases, occurred on the South Side. The per cent. of mortality from Infectious Diseases, on the total mortality of the district, was upon the South Side, 22.52; in the old City, 16.21; and in the East End, 14.89.

In addition to the above the principal causes of death were Consumption, (including Phthisis Pulmonalis, 338, and Pneumonic Phthisis, 15), which caused 353 deaths, equal to 10.6+ per cent. of the total mortality.

*Pneumonia*, which caused 261 deaths, equal to 7.8+ per cent. of the total mortality.

*Bronchitis*, (Acute and Chronic, and Bronchial Catarrh), which caused 68 deaths, equal to 2+ per cent. of the total mortality.

*Diarrhæal Diseases*, (including simple Diarrhœa, 183; Choleraic Diarrhœa, 48; Dysentery, 11; and Cholera-morbus, 12), which caused 254 deaths, equal to 7.6+ per cent. of the total mortality.

*Violence*, (including R. R. Injuries, 74; Intemperance, 50; Burns and Scalds, 28; Drowning, 27; Falls, 22; Suicide, 17; Homicide, 8; Surgical Operations, 10; and various other forms of Violence, 85), which caused 321 deaths, equal to 9.6+ per cent. of the total mortality.

The statement on the following page exhibits the age, sex, and total number of decedents from the different classes.

# CLASSIFIED STATEMENT OF THE DEATHS FROM ALL CAUSES DURING THE YEAR.

DISEASES.	Total.	SEX.		AGE.										
		Male.	Female.	Under one year.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.
Infections.....	592	298	294	46	217	109	64	88	37	13	13	3	2	.....
Constitutional.....	625	329	296	141	46	10	38	108	108	63	66	39	6	.....
Nervous.....	257	146	141	133	54	12	4	8	11	12	20	20	12	1
Circulatory.....	139	82	57	17	1	3	10	13	20	21	24	21	8	1
Respiratory.....	132	248	184	99	82	17	11	49	29	26	40	39	32	8
Digestive.....	490	254	236	250	96	6	10	10	20	21	34	23	15	2
Urinary.....	92	46	46	1	4	.....	6	13	10	18	10	25	2	3
Generative, Female.	54	.....	54	.....	.....	.....	2	23	20	7	2	.....	.....	.....
Unclassified.....	266	125	140	90	1	1	1	1	1	1	.....	4	97	69
Violence.....	321	258	63	19	15	20	31	61	64	52	33	18	7	1
Unknown.....	20	11	9	7	3	2	4	2	1	.....	.....	1	.....	.....
Total.....	3,318	1,798	1,520	803	519	180	181	376	321	237	242	193	181	85

The social relations of the decedents were as follows :

Married.....	911
Single.....	2,036
Widows.....	192
Widowers.....	113
Not stated.....	66
Total.....	<u>3,318</u>

The following statement shows the nativity of the decedents :

Pittsburgh.....	1,651
Other parts of U. S.....	551
Canada.....	7
England.....	106
France.....	10
Germany.....	421
Ireland.....	427
Italy.....	13
Scotland.....	24
Wales.....	40
Sweden.....	6
Poland.....	11
Austria.....	5
Russia.....	4
Switzerland.....	6
Brazil.....	1
Holland.....	1
China.....	3
Not stated.....	31
Total.....	<u>3,318</u>

The location of the decedents was as follows :

City Wards.....	3,016
West Penn Hospital.....	134
St. Francis Hospital.....	52
Mercy Hospital.....	48
Municipal Hospital.....	10
Pittsburgh Infirmary.....	29
St. Paul's Orphan Asylum.....	8
County Jail.....	2
Central Station.....	1
Found in Rivers.....	18
Total.....	<u>3,318</u>

**\* MARRIAGES.**

There were reported to this Office during the year 2,224 marriages, equal to 12.7 per 1,000 inhabitants.

**\* BIRTHS.**

There were reported to this Office during the year, 5,513 births, equal to 31.5 per 1,000 inhabitants.

The annexed statement exhibits the number, by months, of births, marriages, still-births, and deaths occurring in the City of Pittsburgh during the year 1883.

MONTH.	Births.	Marriages.	Still-births.	Deaths.
January.....	511	158	29	325
February.....	420	138	28	273
March.....	548	200	17	321
April.....	357	237	30	281
May.....	466	188	27	232
June.....	461	214	32	233
July.....	573	168	27	425
August.....	423	157	19	264
September.....	430	178	37	245
October.....	460	204	34	251
November.....	413	226	21	226
December.....	451	156	34	242
Total.....	5,513	2,224	335	3,318

The births and marriages show a decided increase as compared with previous years. The deaths show a decrease.

Respectfully submitted,

W. SNIVELY, M. D.,

*Registrar.*

\* Incomplete.

# DEPARTMENT OF HEALTH,

*Municipal Hall, Pittsburgh, February 1st, 1885.*

§§§§§§

## PUBLIC HEALTH REPORT FOR THE YEAR

1884.

§§§§§§

*To the Board of Health.*

GENTLEMEN:—The total number of deaths was 3,753, equal to a death rate of 20 per 1,000. (Population, estimated, 185,000). There were 1,038 deaths of infants, under one year, and 781 of children, between the ages of one and five years, making 48.5 per cent. of the total mortality.

Of the decedents, 1,061 were of Foreign, and 2,692 of Native birth. Of the latter number, 170 were colored.

Infectious Diseases caused 695 deaths, equal to 18.5 per cent. of the total mortality, and 3.8 per 1,000 inhabitants.

Of those required by law to be reported, the statement is as follows:

DISEASES.	Cases.	Deaths.	Per Cent.
Diphtheria .....	1,119	321	26.8
*Smallpox .....	48	12	25 0
Scarlet Fever .....	763	71	9.3
Typhoid Fever .....	525	130	24.8
Cerebro-Spinal Fever .....	41	10	24.4

\*The post Vaccinal cases or Varioloid are included in this statement.

*Measles* prevailed most extensively during the spring and summer quarters of the year. It caused a total mortality of 69 as against 42 for the previous year. Of this number 29 were upon the South Side, 22 in the old City, and 18 in the East End. All of the decedents but two were under ten years of age.

*Whooping Cough* also prevailed most extensively during the spring and summer quarters. The mortality from this cause amounted to but 35, as against 80 for the previous year, and was distributed as follows: East End, 14; old City, 11; South Side, 10. The decedents were all under five years of age.

*Diphtheria*. During the year there were reported 1,199 cases of this disease. Of this number 321 died, a mortality percentage of 26.8, and a rate considerably lower than that of the previous year, when the cases numbered 588, and the deaths 170, percentage 28.9. Following the custom of former years, it prevailed most extensively in that portion of the South Side, viz: the Twenty-fifth, Twenty-sixth, Twenty-seventh, Twenty-eighth, and Twenty-ninth wards, much of the territory of which is level, composed of "made ground," and sadly deficient in drainage and sewerage. The South Side was credited with 844 cases and 203 deaths; the East End with 255 cases and 55 deaths, and the old City with 100 cases and 62 deaths. Of the deaths from this cause, 43 occurred during the first or winter quarter, 63 during the second or spring quarter, 80 during the third or summer quarter, and 135 during the fourth or autumnal quarter. Of the decedents from this cause, 22 were under one year of age, 202 between the ages of one and five years, 82 from five to ten, and 15 were over ten years of age.

*Smallpox*. There were 48 cases and 12 deaths reported from this disease during the first seven months of the year, the last case being reported in July. Ten of the deaths occurred in the Municipal Hospital, the remaining two in the Eighteenth ward.

*Scarlet Fever* of a mild type prevailed throughout the entire year. There were 793 cases reported, of which number 73 died, a mortality percentage of 9.3. There were 409 cases reported from the East End, of which number 33 died; 214 from the old

City, of whom 20 died, and 140 from the South Side, of whom 18 died. Of the decedents, 4 were under one year of age; 52 from one to five years, and 15 were over five years of age.

*Typhoid Fever.* There were 525 cases of this disease reported, of which number 130 died, a mortality percentage of 24.8. This is an unusually high death rate from this disease, and, perhaps explainable upon the supposition that all the cases were not reported. The death rate from this disease for the previous year, was 13 per cent.; 1,442 cases having been reported, with 188 deaths. It prevailed most extensively upon the South Side, 215 cases with 53 deaths having been reported from this district; 112 cases and 37 deaths were reported from the East End, and 85 cases and 19 deaths from the old City. The remaining 113 cases and 21 deaths were reported from the various hospitals. It caused 28 deaths during the first quarter, 17 during the second, 37 during the third, and 48 during the fourth quarter. Of the decedents from this cause, 20 were under ten years of age; 36 from ten to twenty; 46 from twenty to thirty; 16 from thirty to forty; 8 from forty to fifty, and 4 were over fifty years of age.

The mortality from Infectious Diseases was located as follows:

DISTRICT.	Population.	Deaths.	Death Rate per 1,000.
Old City.....	68,000	148	2.18
East End.....	63,000	173	2.75
South Side.....	54,000	340	6.30

The remaining 34 deaths occurred in the hospitals. The above figures show that the highest death rate from Infectious Diseases occurred, as in former years, upon the South Side. The deaths in this district outnumbered those of the old City and East End combined.

The per cent. of mortality from Infectious Diseases on the total mortality of the District was as follows:

DISTRICT.	Total Mortality.	Mortality from Infectious Diseases.	Per Cent.
Old City. ....	1,166	148	12.69
East End.....	1,042	173	16.60
South Side....	1,272	340	26.73



The above figures show that in the old City, which contains about 33,000 inhabitants to the square mile, one-eighth of all the deaths were due to infectious diseases; that in the East End, which contains about 3,000 inhabitants to the square mile, one-sixth, of all the deaths were due to infectious diseases, and that on the South Side, which contains about 10,000 inhabitants to the square mile, more than one-fourth of all the deaths were due to infectious diseases.

In addition to the above, the principal causes of death were *Consumption*, which caused 355 deaths, against 353 for the previous year.

*Pneumonia*, which was credited with 357 deaths against 261 for the previous year.

*Bronchitis*, (Acute and Chronic and Bronchial Catarrh) which caused 120 deaths, against 68 for the previous year.

*Diarrhœal Diseases*, including simple Diarrhœa, 201; Choleraic Diarrhœa, 87; Dysentery, 17; and Cholera-morbus, 10; a total of 315 deaths, against 254 for the previous year.

*Violence*, including Railroad Injuries, 64; Chronic Alcholism or Intemperance, 40; Falls, 30; Drowning, 19; Burns and Scalds, 15; and various other forms of Violence, 120, a total of 288 deaths, against 321 for the previous year.

The following statement exhibits the death rate per 1,000 inhabitants in each of the three divisions of the City:

DISTRICTS.	Population.	Total Mortality.	Death Rate per 1,000.
Old City.....	68,000	1,166	17.12
East End.....	63,000	1,042	16.54
South Side.....	54,000	1,272	23.55

The statement on the following page exhibits the age, sex, and total number of decedents from the different classes.

# CLASSIFIED STATEMENT OF THE DEATHS FROM ALL CAUSES DURING THE YEAR 1884.

CAUSES OF DEATH.	SEX.		AGE.											
	Male.	Female.	Under one year.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	
Infectious.....	347	348	71	341	113	61	58	25	13	7	4	2	.....	
Constitutional.....	361	331	186	55	7	43	119	91	89	50	43	9	.....	
Nervous.....	235	151	185	77	11	6	12	12	25	21	21	12	4	
Circulatory.....	66	58	31	.....	4	8	10	17	17	16	17	4	.....	
Respiratory.....	322	247	196	138	22	13	23	23	31	49	50	20	4	
Digestive.....	326	265	183	143	8	18	23	34	20	25	28	8	1	
Urinary.....	60	39	1	5	.....	3	7	12	16	20	29	6	.....	
Generative.....	.....	55	.....	.....	.....	3	22	22	4	2	1	1	.....	
Unclassified.....	125	123	69	1	.....	.....	.....	1	.....	.....	1	100	76	
Violence.....	237	51	13	21	17	28	65	46	39	33	19	5	2	
Unknown.....	6	.....	3	.....	.....	.....	2	.....	1	.....	.....	.....	.....	
Total.....	2,085	1,668	1,038	781	182	183	341	283	255	223	213	167	87	

The social relations of the decedents were as follows:

Married .....	897
Single.....	2,517
Widows.....	186
Widowers.....	100
Not stated.....	53
Total.....	<u>3,753</u>

The following statement exhibits the nativity of the decedents:

Pittsburgh.....	2,118
Other parts of United States.....	554
Canada.....	9
England.....	104
Ireland.....	421
Scotland.....	14
Wales.....	33
France.....	8
Italy.....	13
Germany.....	417
Switzerland.....	8
Austria.....	5
Poland.....	12
Sweden.....	2
Russia.....	3
Australia.....	2
Not stated.....	26
Total.....	<u>3,753</u>

The location of the decedents was as follows:

City Wards.....	3,480
West Penn Hospital.....	125
St. Francis Hospital.....	47
Mercy Hospital.....	39
Municipal Hospital.....	10
Pittsburgh Infirmary.....	17
Homœopathic Hospital.....	12
St. Paul's Orphan Asylum.....	4
Episcopal Church Home.....	1
Children's Home.....	1
County Jail.....	4
Central Station.....	1
Found in Rivers.....	12
Total.....	<u>3,753</u>

**\*MARRIAGES.**

There were reported to this Office during the year, 2,182 marriages, equal to 11.8 per 1,000 inhabitants, and 42 less than for the previous year.

**\*BIRTHS.**

There were reported to this Office during the year, 5,367 births, equal to 29 per 1,000 inhabitants, and 166 less than for the previous year.

\*Incomplete.

The following statement exhibits the number, by months, of births, marriages, still-births, and deaths, occurring in the City of Pittsburgh during the year:

MONTH.	Births.	Marriages.	Still-births.	Deaths.
January.....	492	182	27	258
February. ....	456	199	33	259
March.....	501	157	23	316
April. ....	407	199	47	307
May.....	469	210	38	316
June.....	436	197	31	321
July.....	445	149	29	385
August.....	476	185	24	374
September.....	438	208	29	323
October. ....	418	184	23	285
November.....	395	169	30	300
December.....	434	143	35	309
Total.....	5,367	2,182	369	3,753

The births and marriages show a slight decrease as compared with the previous year. The deaths show a marked increase.

Respectfully,

W. SNIVELY, M. D.,

*Registrar, Vital Statistics.*



# DEPARTMENT OF HEALTH,

*Municipal Hall, Pittsburgh, February 1st, 1885.*

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## PUBLIC HEALTH REPORT FOR THE YEAR

1885.

§§§§§§

*To the Board of Health.*

GENTLEMEN:—The total number of deaths was 3,840, equal to a death rate of 18.96 per 1,000 inhabitants. (Population, estimated, \*202,559). There were 963 deaths of infants, under one year, and 735 of children, between the ages of one and five years, making 44+ per cent. of the total mortality.

Of the decedents, 1,150 were of Foreign, and 2,690 of Native birth. Of the latter number, 164 were colored.

Infectious Diseases caused 705 deaths, equal to 18+ per cent. of the total mortality, and 3.8 per 1,000 inhabitants.

Of those required by law to be reported, the statement is as follows:

DISEASES.	Cases Reported.	Deaths.	Per Cent.
Diphtheria .....	798	243	30.4+
Smallpox .....	3	0	0
Scarlet Fever .....	932	153	16.4+
Typhoid Fever .....	992	154	15.5+
Cerebro-Spinal Fever .....	38	14	36.8+

\* This estimate is based upon the proportion of taxables to population. Taking the Census year 1880 as a basis, there was in that year 36,135 taxables in a population of 156,384. In 1881 the number of taxables had increased to 38,440, and in 1884 to 45,356. Basing our calculation upon the average annual increase of taxables, and applying the figures of the Census year, 1880, we obtain the following for 1885: Number of taxables, 47,661; population, 202,559.

*Measles* prevailed most extensively during the winter and spring quarters of the year. It caused a total mortality of 46 as against 69 for the previous year. Of this number 19 were upon the South Side, 14 in the old City, and 13 in the East End. All of the decedents were under ten years of age.

*Whooping Cough* prevailed most extensively during the summer and autumnal quarters. The mortality from this cause amounted to 65, as against 35 of the previous year, and was distributed as follows: Old City, 26; East End, 21; South Side, 18. The decedents were all under ten years of age.

*Diphtheria.* During the year there were reported 798 cases of this disease, of which number 243 died, a mortality percentage of 30.4, a rate considerably in excess of that of the previous year, when the cases numbered 1,199, and the deaths 321; percentage, 26.8. It was more generally distributed throughout the City, than in former years, the South Side being credited with 110 deaths; the old City with 74, and the East End with 59.

Of the deaths from this cause, 48 occurred during the first or winter quarter, 47 during the second or spring quarter, 63 during the third or summer quarter, and 85 during the fourth or autumnal quarter. Of the decedents from this cause, 14 were under one year of age, 161 between the ages of one and five years, 57 from five to ten, and 11 were over ten years of age.

*Smallpox.* Three cases of Smallpox were reported from the East End, none of which terminated fatally.

*Scarlet Fever.* There were 932 cases of this disease reported, of which number 153 died, a mortality per cent. of 16.4. The death rate for this disease for the previous year was 24.8, and for the year 1883, 13 per cent. of the cases reported.

It prevailed most extensively in the East End, 442 cases, with 79 deaths were reported from this district; 334 cases, with 58 deaths were reported from the old City; 143 cases, with 15 deaths were reported from the South Side, and 13 cases, with one death were reported from the Children's Home. Of the decedents, 8 were under one year of age; 85 from one to five; 47 from five to ten, and 10 were over ten years of age.



*Typhoid Fever.* There were 992 cases of this disease reported, of which number 154 died, a mortality percentage of 15.5. The death rate of this disease for the previous year was 24.8 per cent; 525 cases having been reported, with 130 deaths.

It prevailed most extensively upon the South Side, 501 cases, with 74 deaths having been reported from this district; 201 cases, with 31 deaths reported from the East End, and 141 cases and 26 deaths from the old City. The remaining 149 cases and 23 deaths were reported from the Hospitals.

It caused 22 deaths during the first quarter, 26 during the second, 67 during the third, and 39 during the fourth quarter.

Of the decedents from this cause, 18 were under ten years of age, 46 from ten to twenty, 51 from twenty to thirty, 21 from thirty to forty, 11 from forty to fifty, and 7 were over fifty years of age.

The mortality from Infectious Diseases was located as follows :

DISTRICTS.	Population.	Deaths.	Rate per 1,000.
Old City.....	69,568	205	2.95
East End.....	77,061	219	2.84
South Side.....	55,930	250	4.47
Total.....	202,559	674	3.34

The remaining 31 deaths occurred in the Hospitals. The above figures show that the highest death-rate from Infectious Diseases occurred, as in former years, upon the South Side. The per cent. of mortality from Infectious Diseases on the total mortality of the District, was as follows :

DISTRICTS.	Total Mortality.	Mortality Infectious.	Per cent.
Old City.....	1,184	205	17.3
East End.....	1,206	219	18.2
South Side.....	1,110	250	22.5
Total.....	*3,500	674	19.3

\* Hospitals and Public Institutions are excluded in this statement.

The above figures show that in the old City, which contains 33,128 inhabitants to the square mile, almost one-sixth of all the deaths were due to infectious diseases; that in the East End, which contains 3,510 inhabitants to the square mile, almost one-sixth of all the deaths were due to infectious diseases; and that on the South Side, which contains 10,715 inhabitants to the square mile, more than one-fourth of all the deaths were due to infectious diseases.

In addition to the above, the principal causes of death were *Consumption*, which caused 380 deaths, against 355 for the previous year.

The annexed statement exhibits the deaths from this cause, and the per cent. of the total mortality for the past thirteen years.

YEARS.	Deaths, Consumption.	Total Mortality.	Per cent. total Mortality.
1873.....	326	3,519	9.26
1874.....	331	3,381	9.79
1875.....	345	2,957	11.67
1876.....	341	2,896	11.77
1877.....	301	3,408	8.83
1878.....	315	3,068	10.27
1879.....	261	2,923	8.93
1880.....	314	3,165	9.92
1881.....	349	3,410	10.23
1882.....	316	4,493*	7.03
1883.....	353	3,318	10.64
1884.....	355	3,753	9.46
1885.....	380	3,840	9.90
Total.....	4,287	44,131	9.71 †

\* Smallpox prevailed extensively during this year.

*Pneumonia* was credited with 349 deaths, against 357 for the previous year. It caused 147 deaths during the first or winter quarter; 84 during the spring quarter; 36 during the summer quarter, and 82 during the autumnal quarter.

Of the decedents, 145 were under five years of age; 109 from five to fifty, and 95 were over fifty years of age.

*Bronchitis*, (Acute and Chronic, and Bronchial Catarrh), caused 125 deaths, against 120 for the previous year.

*Diarrhœal Diseases*, including simple Diarrhœa, 238; Choleraic Diarrhœa, 66; Dysentery, 20; and Cholera-morbus, 15, a total of 339 deaths, against 315 for the previous year.

*Violence*, including R. R. Injuries, 60; Chronic Alcoholism or Intemperance, 37; Burns and Scalds, 32; Drowning, 32; Falls, 20; Suicide, 12; Homicide, 8; and various other forms of Violence, 91, making a total of 292 deaths against 288 for the previous year.

The annexed statement exhibits the death-rate per 1,000 inhabitants in each of the three divisions of the City.

* DISTRICTS.	Population.	Total Mortality.	Death-rate per 1,000.
Old City, 1st to 12th Ward, inclusive. . .	69,568	1,184	17.02
East End, 13th to 23d Ward, inclusive. .	77,061	1,206	15.65
South Side, 24th to 36th Ward inclusive..	55,930	1,110	19.83

\* Hospitals and Public Institutions are excluded in this statement.

CLASSIFIED STATEMENT OF THE DEATHS FROM ALL CAUSES DURING THE YEAR, 1885.

CAUSES OF DEATH.	SEX.		AGE.													
	Total.	Males.	Females.	Under 1 year.	1.	2.	5.	10.	20.	30.	40.	50.	60.	70.	80.	90.
Infectious.....	705	347	358	67	83	245	126	68	64	26	15	5	4	2	.....	.....
Constitutional. ....	740	391	349	190	32	22	14	48	134	110	88	53	36	12	1	.....
Nervous.....	378	202	176	134	45	31	17	10	14	15	23	22	30	30	7	.....
Circulatory.....	165	86	79	38	.....	.....	3	12	14	14	20	22	19	18	5	.....
Respiratory.....	564	312	252	147	72	51	18	10	32	34	36	41	53	53	16	1
Digestive.....	615	311	304	284	103	25	11	10	23	36	32	30	27	27	7	.....
Urinary.....	105	71	34	2	1	2	6	3	4	23	15	20	20	9	.....	.....
Generative.....	63	.....	63	.....	.....	.....	.....	4	32	18	7	.....	2	.....	.....	.....
Unclassified.....	213	92	121	83	.....	.....	.....	36	.....	1	.....	.....	1	60	57	11
Violence.....	292	239	53	18	9	14	12	.....	45	57	57	17	11	15	1	.....
Total.....	3,840	2,051	1,789	963	345	390	207	201	362	334	293	210	203	226	94	12

**SOCIAL RELATIONS.**

Married.....	994
Single.....	2,453
Widows.....	237
Widowers.....	109
Not stated .....	47
Total.....	3,840

**NATIVITY.**

Pittsburgh.....	2,088
Other parts of U. S. ....	587
Canada.....	6
England.....	100
France.....	6
Germany.....	436
Ireland.....	466
Italy.....	12
Scotland.....	22
Wales.....	58
Sweden.....	4
Poland.....	8
Switzerland.....	3
Russia.....	4
Austria.....	5
Belgium.....	2
Australia.....	2
Holland.....	1
Greece.....	1
New Brunswick.....	1
Nova Scotia.....	1
Atlantic Ocean.....	1
Not stated.....	26
Total.....	3,840

**LOCATION OF DECEDENTS.**

City Wards.....	3,500
West Penn Hospital.....	127
Mercy Hospital.....	55
Pittsburgh Infirmary.....	10
St. Francisus Hospital.....	38
Homœopathic Hospital.....	49
Little Sisters of the Poor.....	2
St. Paul's Orphan Asylum.....	18
Children's Home.....	4
Episcopal Church Home.....	1
Central Station.....	6
Found in Rivers.....	30

**\* MARRIAGES.**

There were reported to this Office during the year 1,909 marriages, equal to 9.43 per 1,000 inhabitants, and 273 less than the previous year.

**\* BIRTHS.**

There were reported to this Office during the year, 5,675 births, equal to 28 per 1,000 inhabitants, and 308 more than for the previous year.

\* Incomplete.

The following statement exhibits the number, by months, of births, marriages, still-births, and deaths occurring in the City of Pittsburgh during the year 1885:

MONTH.	Births.	Marriages.	Still-births.	Deaths.
January.....	486	165	43	334
February.....	494	137	37	313
March.....	514	113	28	287
April.....	379	175	33	291
May.....	434	163	19	280
June.....	450	168	20	288
July.....	478	152	22	472
August.....	483	159	36	393
September.....	526	335	26	315
October.....	468	*85	28	285
November.....	446	128	25	286
December.....	517	129	26	296
Total.....	5,675	1,909	343	3,840

\* New Marriage Law became operative.

Respectfully submitted,

W. SNIVELY, M. D.,

*Registrar.*

# DEPARTMENT OF HEALTH,

*Pittsburgh, February 1st, 1887.*

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## PUBLIC HEALTH REPORT FOR THE YEAR 1886.

§§§§§§

*To the Board of Health.*

GENTLEMEN:—The total number of deaths was 4,225, equal to an annual death rate of 20.6 per 1,000 inhabitants. (Population, estimated, 205,000).

There were 1,176 deaths of infants, under one year, and 915 of children, between the ages of one and five years, making 49.5 per cent. of the total mortality.

Of the decedents 1,094 were of Foreign, and 3,131 of Native birth. Of the latter number, 187 were colored.

Infectious Diseases caused 837 deaths, equal to 19.8 per cent. of the total mortality, and 4 per 1,000 inhabitants.

Of those required by law to be reported, the statement is as follows :

DISEASES.	Cases Reported.	Deaths.	Per Cent.
Diphtheria.....	675	249	36.9
Smallpox.....	4	0	0
Scarlet Fever.....	1,083	182	16.8
Typhoid Fever.....	1,045	140	13.4
Cerebro-spinal Fever.....	33	13	39.4

*Measles* prevailed most extensively during the autumn quarter of the year, causing a total mortality of 117, as against 46 for the previous year.

Thirteen of these deaths occurred in the old City, six in the East End, and ninety-eight upon the South Side. All of the decedents were under ten years of age.

*Whooping Cough* prevailed most extensively during the summer quarter. The mortality from this cause aggregated 109, as against 65 for the previous year, and was distributed as follows: Old City, 42; East End, 30; South Side, 36; in Hospital, 1. The decedents were all under ten years of age.

*Diphtheria*. There were reported during the year 675 cases of this disease, of which number 249 died, a mortality percentage of 36.9. The previous year the cases numbered 798, and the deaths, 243; per centage, 30.4. It prevailed more extensively in the East End than during former years, the record being as follows: Old City, 59; East End, 116; South Side, 72; in Hospital, 1.

Of the deaths from this cause, 60 occurred during the first or winter quarter, 33 during the second or spring quarter, 48 during the third or summer quarter, and 107 during the fourth or autumnal quarter.

Of the decedents from this cause, 10 were under one year of age, 163 between the ages of one and five, 57 from five to ten, and 19 were over ten years of age.

*Variola*. During the latter half of the year, three cases of Variola were reported from the old City, and one from the East End, none of which terminated fatally.

*Scarlet Fever*. There were 1,083 cases of this disease reported, of which number 182 died; the mortality percentage being 16.8. The death rate being about the same as for the previous year.

It prevailed most extensively in the East End, 596 cases and 93 deaths were reported from this District; 292 cases and 60 deaths were reported from the old City, and 194 cases and 30 deaths were reported from the South Side.



Of the decedents, 9 were under one year of age, 113 from one to five, 51 from five to ten, and 9 were over ten years of age.

*Typhoid Fever.* There were 1,045 cases of this disease reported, of which number 140 died, a mortality percentage of 13.4.

The death rate of this disease for the previous year was 15.5; 992 cases having been reported, with 154 deaths.

It prevailed most extensively upon the South Side, 521 cases, with 68 deaths having been reported from this District; 241 cases, with 30 deaths were reported from the East End, and 212 cases, with 16 deaths were reported from the old City. The remaining 71 cases, with 26 deaths were reported from the various Hospitals.

It caused 16 deaths during the first quarter, 14 deaths during the second, 65 during the third, and 45 during the fourth quarter.

Of the decedents from this cause, 10 were under ten years of age, 45 from ten to twenty, 55 from twenty to thirty, 18 from thirty to forty, 9 from forty to fifty, and 3 were over fifty years of age.

The mortality from Infectious Diseases was located as follows:

DISTRICTS.	Population.	Deaths.	Rate per 1,000.
Old City.....	70,000	201	2.87
East End.....	79,000	286	3.61
South Side.....	56,000	317	5.66
. Total.....	205,000	804	3.92

The remaining 33 deaths occurred in the Hospitals. The above figures show that the highest death rate from Infectious Diseases occurred, as in previous years, upon the South Side.

The per cent. of mortality from Infectious Diseases, on the total mortality of the District, was as follows :

DISTRICTS.	Total Mortality.	Mortality, Infectious Diseases.	Per cent.
Old City.....	1,255	201	16.0
East End.....	1,355	286	21.1
South Side....	1,300	317	24.4
Total.....	3,910	804	20.5

The above figures show that in the old City, which contains 33,140 inhabitants to the square mile, one-sixth of all the deaths were due to Infectious Diseases; that in the East End, which contains 3,550 inhabitants to the square mile, one-fourth of the deaths were due to Infectious Diseases, and that on the South Side, which contains 10,720 inhabitants to the square mile, considerably more than one-fourth of all the deaths were due to Infectious Diseases.

In addition to the above the principal causes of death were:

*Consumption*, which caused 372 deaths against 380 for the previous year.

The annexed statement exhibits the deaths from this cause, and the per cent. of the total mortality for the past fourteen years.

YEARS.	Deaths, Consumption.	Total Mortality.	Per cent. total Mortality.
1873.....	326	3,519	9.26
1874.....	331	3,381	9.79
1875.....	345	2,957	11.67
1876.....	341	2,896	11.77
1877.....	301	3,408	8.83
1878.....	315	3,068	10.27
1879.....	261	2,923	8.93
1880.....	314	3,165	9.92
1881.....	349	3,410	10.23
1882.....	316	*4,493	7.93
1883.....	353	3,318	10.64
1884.....	355	3,753	9.46
1885.....	380	3,840	9.90
1886.....	372	4,225	8.80
Total.....	4,659	48,356	9.63

\* Smallpox prevailed extensively during this year.

*Pneumonia* was credited with 418 deaths against 349 for the previous year.

It caused 106 deaths during the first or winter quarter, 112 during the spring quarter, 73 during the summer quarter, and 127 during the autumnal quarter.

Of the decedents 201 were under five years of age, 111 from five to fifty, and 106 were over fifty years of age.

*Bronchitis*, (Acute and Chronic, and Bronchial Catarrh), caused 143 deaths, against 125 for the previous year.

*Diarrhæal Diseases*, (including simple Diarrhœa, 219; Choleraic Diarrhœa, 55; Dysentery, 15; and Cholera-morbus, 21), a total of 310 deaths against 339 for the previous year.

*Violence*, (including R. R. Injuries, 59; Chronic Alcoholism or Intemperance, 37; Burns and Scalds, 28; Drowning, 25; Falls, 22; Suicide, 23; Homicides, 6, and various other forms of Violence, including Surgical Operations, 103), making a total of 303 deaths against 292 for the previous year.

The annexed statement exhibits the death rate per 1,000 inhabitants in each of the three Districts of the City.

* DISTRICTS.	Population.	Total Mortality.	Death-rate per 1,000.
Old City, 1st to 12th Ward, inclusive....	70,000	1,255	17.93
East End, 13th to 23d Ward, inclusive....	79,000	1,355	17.15
South Side, 24th to 36th Ward inclusive..	56,000	1,300	23.21
Total.....	205,000	3,900	19.10

\* Hospitals and Public Institutions are excluded from this statement.

CLASSIFIED STATEMENT OF DEATHS FROM ALL CAUSES DURING THE YEAR, 1886.

CAUSES OF DEATH.	SEX.			AGE.												
	Total.	Males.	Females.	Under 1 year.	1.	2.	5.	10.	20.	30.	40.	50.	60.	70.	80.	90.
Infectious.....	837	426	411	106	167	255	131	66	62	21	15	6	6	1	1	.....
Constitutional.....	783	398	385	220	42	31	14	48	132	94	78	54	49	17	4	.....
Nervous.....	427	226	201	178	45	25	15	13	14	14	13	34	41	29	6	.....
Circulatory.....	153	80	73	25	.....	1	3	10	11	19	22	24	21	15	2	.....
Respiratory.....	665	353	312	178	99	69	11	22	29	43	27	35	73	61	17	1
Digestive.....	691	338	353	350	119	32	10	12	20	26	30	28	43	18	3	.....
Urinary.....	120	73	47	2	1	5	5	5	10	14	16	21	28	9	4	.....
Generative.....	46	.....	46	.....	.....	.....	.....	3	16	21	6	.....	.....	.....	.....	.....
Unclassified.....	198	93	105	98	1	.....	.....	.....	1	.....	1	1	4	43	41	8
Violence.....	303	231	72	19	5	17	14	35	52	63	44	26	21	3	2	2
Unknown.....	2	1	1	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Total.....	4,225	2,219	2,006	1,176	479	436	203	214	347	315	253	219	286	196	80	11

**SOCIAL RELATIONS.**

Married.....	940
Single.....	2,870
Widows.....	240
Widowers.....	120
Not stated.....	55
Total.....	<u>4,225</u>

**NATIVITY.**

Pittsburgh.....	2,471
Other parts of United States.....	642
Canada.....	9
England.....	102
France.....	4
Germany.....	467
Ireland.....	395
Italy.....	14
Scotland.....	20
Wales.....	40
Sweden.....	4
Poland.....	9
Switzerland.....	4
Russia.....	4
Austria.....	6
Belgium.....	2
Norway.....	1
China.....	2
Atlantic Ocean.....	4
Not stated.....	25
Total.....	<u>4,225</u>

**LOCATION OF DECEDENTS.**

Old City.....	1,255
East End.....	1,355
South Side.....	1,300
West Penn Hospital.....	102
Mercy Hospital.....	66
Pittsburgh Infirmary.....	5
St. Francis Hospital.....	39
Homœopathic Hospital.....	54
Hospital for Incurables.....	2
Little Sisters of the Poor.....	16
St. Paul's Orphan Asylum.....	7
Home of Friendless.....	1

County Jail.....	1
Central Station .....	2
Found in Rivers.....	20
Total .....	4,225

**\*MARRIAGES.**

There were reported to this Office during the year, 1,723 marriages, equal to 8.4 per 1,000 inhabitants, and 186 less than for the previous year.

**\*BIRTHS.**

There were reported to this Office during the year, 5,949 births, equal to 29 per 1,000 inhabitants, and 274 more than for the previous year.

\*Incomplete.

The following statement exhibits the number, by months, of births, marriages, still-births, and deaths, occurring in the City of Pittsburgh during the year 1886:

MONTHS.	Births.	Marriages.	Still-births.	Deaths.
January.....	504	102	34	321
February. ....	495	98	30	275
March.....	513	102	36	351
April. ....	419	134	32	288
May.....	397	174	18	293
June.....	561	145	25	408
July.....	490	127	26	495
August.....	515	129	30	433
September.....	542	166	35	303
October.....	510	216	19	333
November.....	513	185	29	369
December.....	490	145	19	356
Total.....	5,949	1,723	333	4,225

The following table shows the number of Births, Marriages, and Deaths, recorded in this Department since its organization:

YEARS.	Births.	Marriages.	Deaths.
1852 .....	.....	.....	* 365
1853 .....	.....	.....	898
1854 .....	.....	.....	1,831
1855 .....	.....	.....	1,000
1856 .....	.....	.....	815
1857 .....	.....	.....	943
1858 .....	.....	.....	888
1859 .....	.....	.....	820
1860 .....	.....	.....	860
1861 .....	.....	.....	948
1862 .....	.....	.....	1,066
1863 .....	.....	.....	998
1864 .....	.....	.....	1,162
1865 .....	.....	.....	999
1866 .....	.....	.....	1,070
1867 .....	.....	.....	1,042
1868 .....	.....	.....	1,233
1869 .....	.....	.....	1,477
1870 (New Registration Act)....	*1,750	* 562	1,867
1871 .....	2,886	1,059	2,531
1872 .....	3,378	1,143	2,456
1873 .....	5,175	1,782	3,519
1874 .....	5,084	1,533	3,381
1875 .....	4,930	1,192	2,957
1876 .....	4,264	1,118	2,896
1877 .....	4,215	1,110	3,408
1878 .....	4,179	1,174	3,068
1879 .....	4,449	1,290	2,923
1880 .....	4,756	1,492	3,410
1881 .....	4,197	1,782	4,493
1882 .....	4,637	1,945	4,090
1883 .....	5,513	2,224	3,318
1884 .....	5,367	2,182	3,753
1885 .....	5,675	1,909	3,840
1886 .....	5,949	1,723	4,225
Total .....	76,404	25,220	74,550

\* Six months.

Respectfully submitted,

W. SNIVELY, M. D.,

*Registrar, Vital Statistics.*





# DEPARTMENT OF HEALTH.

*Pittsburgh, January 1st, 1888.*

## PUBLIC HEALTH REPORT FOR THE YEAR 1887.

*To the Board of Health.*

GENTLEMEN:—I have the honor to submit the following report of the vital statistics of the City of Pittsburgh, for the year 1887:

The total number of deaths was 4,713, equal to an annual death rate of 22.4 per 1,000 inhabitants. (Estimated population, 210,000.)

There were 1,190 deaths of infants under one year, and 953 of children between the ages of one and five years, making 45.5 per cent. of the total mortality.

Of the decedents 1,421 were of foreign, and 3,292 of native birth. Of the latter number 176 were colored.

Infectious diseases (acute) caused 860 deaths, equal to 18.2 per cent. of the total mortality, 4 per 1,000 inhabitants.

Of those required by law to be reported, the statement is as follows:

	Cases Reported	Deaths.	Per Cent.
Smallpox.....	5	2	40.0
Diphtheria .....	874	281	32.2
Scarlet Fever.....	406	46	11.3
Typhoid Fever .....	2,226	269	12.1
Cerebro-Spinal Fever .....	24	20	83.3
	3,535	618	17.5

*Measles* prevailed most extensively during the first or winter quarter of the year, causing a total mortality of 180 against 117 for the previous year.

Of these deaths 54 occurred in the Old City, 43 in the East End, 74 on the South Side, and 9 in Public Institutions. Of the decedents 34 were under one year of age, 126 from one to five, 19 from five to twenty, and one was over thirty years of age.

*Whooping Cough* prevailed most extensively during the third or summer quarter, causing a mortality of 43 against 109 for the previous year. The decedents from this cause were located as follows: Old City, 16; East End, 15; South Side, 18. They were all under ten years of age.

*Diphtheria.* There were reported during the year 874 cases, of which number 281 died, a mortality of 32.2 per cent. The previous year the cases numbered 675 and the deaths 249; per cent. 36.9. It prevailed most extensively in the East End, being located as follows: Old City, 260 cases with 76 deaths; East End, 415 cases with 124 deaths; South Side, 196 cases with 80 deaths; hospitals, 3 cases with 1 death.

Of the deaths from this cause, 74 occurred during the first or winter quarter; 41 during the second or spring quarter; 73 during the third or summer quarter; and 93 during the fourth or autumnal quarter.

Of the decedents, 8 were under one year of age; 178 between the ages of one and five; 81 from five to ten; and 14 were over ten years of age.

*Variola.* During the first half of the year five cases of smallpox were reported—two from the Twelfth ward, two from the Thirteenth ward, and one from the Thirtieth ward. All these patients were removed to the municipal hospital, and two of them terminated fatally.

*Scarlet Fever.* There were 406 cases of this disease reported during the year, of which number 46 died, a mortality per cent. of 11.3, being below that of the previous year. It prevailed most extensively on the South Side. 176 cases and 17 deaths were reported from this district; 136 cases and 14 deaths were reported from the East End; and 90 cases with 15 deaths were reported from the Old City.

Of the decedents, 31 were under five, and 15 were between the ages of five and thirty.

*Typhoid Fever.* There were 2,226 cases of this disease reported during the year, of which number 269 died, a mortality per cent. of 12.1. The mortality per cent. for the previous year was 13.4, 1,045 cases having been reported, with 140 deaths.

It prevailed most extensively upon the South Side, the record being as follows: South Side, 1,439 cases with 130 deaths; East End, 418 cases with 38 deaths; Old City, 288 cases with 30 deaths. The remaining 81 cases with 71 deaths were reported from the various hospitals. It caused 35 deaths during the first quarter; 35 during the second; 89 during the third, and 110 during the fourth quarter.

Of the decedents, 21 were under ten years of age, 67 from ten to twenty, 108 from twenty to thirty, 47 from thirty to forty, 14 from forty to fifty, and 12 were over fifty years of age.

The mortality from Acute Infectious diseases was as follows:

DISTRICTS.	Estimated Population.	Deaths.	Rate per 1000
Old City (first 12 wards.....)	71,000	195	2.75
East End (13th to 23d wds. inclusive)	82,000	244	2.98
South Side (24th to 36th do. do.....)	57,000	331	5.81
Total.....	210,000	770	3.67

The remaining 90 deaths occurred in the various hospitals. The above figures show that the highest death rate from infectious diseases occurred, as in previous years, upon the South Side.

The per cent. of mortality from Acute Infectious diseases on the total mortality of the district was as follows.

DISTRICTS.	Total Mortality.	Deaths from Acute Infect. Diseases	Per Cent.
Old City.....	1,332	195	14.64
East End.....	1,418	244	17.21
South Side.....	1,517	331	21.82
Total.....	4,267	770	18.05

The above figures show that in the Old City, which contains about 33,650 inhabitants to the square mile, about one-seventh of all the deaths were due to Acute Infectious diseases; that in the East End, which contains about 3,685 inhabitants to the square mile, about

one-sixth of all the deaths were due to Acute Infectious diseases; and that on the South Side, which contains about 10,920 inhabitants to the square mile, more than one-fifth of all the deaths were due to Acute Infectious diseases.

In addition to the above the principal causes of death were *Consumption*, which was credited with 408 deaths against 372 for the previous year.

The annexed statement exhibits the deaths from this cause, and the per cent of the total mortality for the past fifteen years.

YEARS.	Deaths from Consumption.	Total Mortality.	Per Cent.
1873 .....	326	3,519	9.26
1874 .....	331	3,381	9.79
1875 .....	345	2,957	11.67
1876 .....	341	2,896	11.77
1877 .....	301	3,408	8.83
1878 .....	315	3,068	10.27
1879 .....	261	2,923	8.93
1880 .....	314	3,410	9.20
1881 .....	349	4,493	7.77
1882 .....	316	4,090	7.72
1883 .....	353	3,318	10.64
1884 .....	355	3,752	9.46
1885 .....	380	3,840	9.90
1886 .....	372	4,225	8.80
1887 .....	408	4,713	8.66
Total .....	5,067	53,069	9.55

*Pneumonia* was credited with 408 deaths against 418 for the previous year. It caused 151 deaths during the first quarter; 109 during the second; 52 during the third, and 96 during the fourth quarter. Of the decedents 190 were under five years of age, 116 from five to fifty, and 102 were over fifty years of age.

*Bronchitis* (Acute Chronic and Capillary) was certified as the cause of 163 deaths against 143 for the previous year.

*Croup* was designated as the cause of 103 deaths, all of which, with but one exception, were children under ten years of age. It is probable that some of these deaths resulted from Diphtheria.

*Diarrhæal Diseases* (including simple Intestinal Catarrh, 97; Choleraic Diarrhœa, 373, and Dysentery 22,) caused a total of 492 deaths against 310 for the previous year.

Of the decedents from the causes comprised under this head, 333 were under one year of age, 116 from one to five, 16 from five to fifty, and 27 were over fifty years of age.

The largely increased mortality of infants from Choleraic Diarrhœa was due to the excessive and persistent elevation of temperature during the months of June, July and August.

During this hot period 51 deaths were reported from *Solar Heat* or *Insolation*. These decedents were all, with but two exceptions, over ten years of age. It is probable that some of the 46 deaths reported from *Congestion of the Brain*, were due to this cause.

*Violence* (including Railroad Injuries, 69; Drowning, 45; Chronic Alcoholism or Intemperance, 46; Burns and Scalds, 42; Falls, 19; Suicides, 20; Homicides, 9; Infanticides, 3; Surgical Operations, 9, and various other forms of Accident and Injury, 96,) caused a total of 358 deaths against 303 for the previous year.

The annexed statement exhibits the death rate per 1000 inhabitants in each of the three Districts of the city :

*DISTRICT.	Estimated Population.	Total Mortality.	Death Rate Per 1,000
Old City (first twelve wards).....	71,000	1,332	18.76
East End (13th to 23d wd, inclusive)	82,000	1,418	17.29
South Side (24th to 36th do. do. ....)	57,000	1,517	26.61
Total.....	210,000	4,267	20.32

\* Hospitals and Public Institutions are not included in the above statement.

The annexed statement exhibits the sex, age and total mortality by classes of the decedents during the year ending December 31, 1887.

Classified Statement of Deaths from all Causes during the Twelve Months ending December 31, 1887.

Causes of Death.	SEX.		AGE.													
	Total.	Male.	Female.	Under one year.	1-2	2-5	5-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90
Infectious.....	860	422	438	68	132	243	124	90	119	52	18	4	5	4	1	.....
Constitutional .....	763	393	370	174	35	23	5	44	144	115	90	52	55	22	4	.....
Nervous.....	517	308	209	165	44	44	13	14	31	42	26	39	43	44	12	.....
Circulatory.....	220	115	105	34	.....	2	5	15	23	30	23	23	41	17	7	.....
Respiratory .....	760	407	353	177	106	126	41	13	40	37	50	53	55	45	15	2
Digestive.....	860	460	400	453	141	34	8	9	25	25	33	53	40	24	14	1
Urinary.....	135	82	53	4	1	2	6	2	15	20	18	21	28	13	5	.....
Generative.....	75	.....	75	.....	.....	.....	.....	4	40	24	6	.....	1	.....	.....	.....
Unclassified.....	165	84	81	89	.....	.....	.....	.....	.....	1	.....	.....	1	32	37	5
Violence .....	358	301	57	26	10	10	23	27	74	70	49	38	18	10	2	1
Total.....	4,713	2,572	2,141	1,190	469	484	225	218	511	416	313	283	287	211	97	9

The annexed statements show the social relations, nativity, and location of the decedents during the year 1887.

### SOCIAL CONDITION.

Single.....	3,102
Married .....	1,184
Widows.....	270
Widowers.....	142
Not stated.....	15
Total.....	4,713

### NATIVITY.

Pittsburgh.....	2,570
Other parts of United States.....	738
Germany.....	532
Ireland.....	524
England .....	145
Wales.....	66
Poland .....	31
Scotland.....	21
Italy .....	17
Russia.....	10
Sweden.....	10
Canada .....	9
Switzerland.....	8
France.....	8
Belgium .....	4
Austria .....	4
China .....	2
Nova Scotia.....	1
New Brunswick.....	1
West Indies .....	1
Jamaica .....	1
Spain .....	1
Hungary .....	1
Atlantic Ocean.....	1
Not stated.....	7
Total.....	4,713

## LOCATION.

Old City.....	1,332
East End.....	1,418
South Side.....	1,517
West Penn Hospital.....	151
Mercy Hospital.....	88
Homœopathic Hospital .....	73
St. Francisus Hospital.....	46
Home for the Aged.....	16
St. Paul's Orphan Asylum.....	8
Children's Home.....	5
County Jail.....	5
Municipal Hospital.....	2
Episcopal Church Home.....	2
Pittsburgh Infirmary.....	1
Home for Incurables.....	1
Convent Sisters of Mercy.....	1
Central Police Station.....	1
Found in rivers .....	46
Total .....	4,713

## MARRIAGES.

There were registered in this Office during the year 2,033 marriages, equal to 10 per 1000 inhabitants, and 310 more than for the previous year.

## BIRTHS.

There were registered in this office during the year 5,954 births, equal to 28.4 per 1000 inhabitants, and 5 more than for the previous year.

The annexed statement exhibits the number by months of births, marriages, deaths and still births occurring in the City of Pittsburgh during the year 1887.

	Births	Marriages.	Deaths.	Dead-born
January.....	537	155	397	38
February.....	482	176	335	29
March .....	560	112	394	26
April .....	417	190	337	36
May .....	478	225	322	29
June .....	492	186	431	29
July .....	532	128	643	34
August .....	455	152	440	28
September.. ..	522	155	361	25
October .....	516	176	335	28
November .....	477	211	323	27
December .....	486	167	395	32
Total.....	5,954	2,033	4,713	361



The following table shows the number of Births, Marriages and Deaths, recorded in this Department since its organization :

YEARS.	Births.	Marriages	Deaths.
1852 .....			* 365
1853 .....			898
1854 .....			1,831
1855 .....			1,000
1856 .....			815
1857 .....			943
1858 .....			888
1859 .....			820
1860 .....			860
1861 .....			948
1862 .....			1,066
1863 .....			998
1864 .....			1,162
1865 .....			999
1866 .....			1,070
1867 .....			1,042
1868 .....			1,233
1869 .....			1,477
1870 (New Registration Act).....	*1,750	* 562	1,867
1871 .....	2 886	1,059	2,531
1872 .....	3 378	1,143	2,456
1873 .....	5,175	1,782	3,519
1874 .....	5,084	1,533	3,381
1875 .....	4,930	1,192	2,957
1876 .....	4 264	1,118	2,896
1877 .....	4,215	1,110	3,408
1878 .....	4,179	1,174	3,068
1879 .....	4,449	1,290	2,923
1880 .....	4,756	1,492	3,410
1881 .....	4,197	1,782	4,493
1882 .....	4,637	1,945	4,040
1883 .....	5,513	2,224	3,318
1884 .....	5,367	2,182	3,753
1885 .....	5,675	1,909	3,840
1886 .....	5,949	1,723	4,225
1887 .....	5,954	2,033	4 713
Total.....	82,358	27,253	79,263

\* Six months.

Respectfully submitted,

W. SNIVELY, M. D.,

*Registrar Vital Statistics.*

## REPORT OF SPECIAL COMMITTEE

*Appointed by Board of Health to Examine the South Side Water Supply, and to inquire into the cause of the epidemic of Typhoid Fever, in that section, December 12th, 1887 :*

PITTSBURGH, December 23rd, 1887.

*To the Board of Health :*

GENTLEMEN,—Your Committee appointed to examine the South Side water supply and enquire into the cause of the present epidemic of Typhoid Fever in that section of the city, beg leave to report that they engaged Hugo Blanck, Professor of Chemistry in the Western Penna. Medical College, and in the Pittsburgh College of Pharmacy, and Messrs. Hunt and Clapp, Chemists of this city, to make chemical analyses of water from the following places :

- 1st. From the mouth of the influent pipe of the Monongahela Water Co.'s Works at South 30th street.
- 2nd. From the receiving basin of said works.
- 3rd. From distributing basin of same.
- 4th. From tank in 31st Ward.
- 5th. From South Side hydrant.
- 6th. By way of comparison, from hydrant supplied by Pittsburgh Water Works.

They also engaged Dr. E. A. Mundorff, Professor of Microscopy and General Pathology in the Western Penna. Medical College, and Prof. J. H. Logan, Demonstrator of Microscopy in the same Institution, to make microscopical examinations of water from the same points.

The reports of these gentlemen are herewith submitted as part of this report and marked respectively exhibits A B C and D.

To summarize these reports, the Chemical Analyses show that the water supplied to the South Side by the Monongahela Water Co.,

as compared with the water furnished from the Pittsburgh Water Works, contains 100 per ct. more total solids, fixed solids, organic matter, free ammonia, albuminoid ammonia, chlorine, nitric and nitrous acids, and about 500 per ct. more sulphuric acid.

These chemical analyses also demonstrate the fact that the water, as taken about twelve inches from the bottom of the river at the mouth of the influent pipe, contains a smaller amount of total solids, less chlorine, sulphuric, nitric and nitrous acids and free ammonia, and 40 to 75 per cent. less organic matter, than the water found in the tanks and drawn from the hydrants. This can only be accounted for by the solid and organic matter being drawn into the pipes in the process of pumping.

The permanent hardness of the Monongahela water as examined is from 100 to 150 per cent. greater than that drawn from hydrants in Old City.

The microscopical examinations demonstrate the presence of epithelium, bacteria, micrococci and vegetable organisms in great abundance; they also demonstrate the presence of a large amount of organic excrementitious matter.

No epithelium was found in the samples taken in the Old City. The number of bacteria, micrococci and vegetable organisms was much less than in the South Side water. The mineral deposit was not as great, and the yellow rosettes of organic excrementitious matter were wanting.

The sketches of the organisms found, as obtained by the use of the Camera Lucida, and submitted by Prof. Mundorff, are worthy of study, as he submits the microscopic appearances of fresh stools from a typhoid fever patient. Comparing these with the bacteria found in the water supplied to the South Side, the family resemblance is found to be decidedly pronounced.

On Friday, December 16th, your Committee visited the pumping station at South 30th street, and found that the influent pipe of the Water Works extends about 125 feet from the edge of the water at the present time. The mouth of said influent pipe is about 150 feet above the Monongahela Connecting Railway Co.'s Bridge, and directly in line with the first pier of the same. Three or four squares above the influent pipe the shore extends out quite a distance beyond the shore line at 30th street. A short distance below the Bridge the shore again pushes out beyond the line at 30th street.

Between these points there is little or no current. This space of still water is used as a harbor or mooring place for boat houses, barges, rafts, &c., and the excrement from those occupying and working on and about them, is dropped into the water in the vicinity of the influent pipe daily.

The 30th street sewer, which drains quite a large area and the car stables in the immediate vicinity, empties against or rather along side the abutment of the Monongahela Connecting Railway Co.'s Bridge, 150 feet below the influent pipe.

Just at the point where the 30th street sewer empties, the discharge from a smaller sewer, with an abrupt fall from Jones and Laughlin's mills, strikes it at right angles and the velocity with which the contents of this sewer are poured out will tend to force the flow from both sewers in the direction of the first pier of the bridge. There being but little current at this point, the contents of the sewers being disseminated in the direction of the pier, and this pier being in a direct line with the mouth of the influent pipe, and but a short distance below, and forming an eddy with what little current there is, it cannot well be otherwise than that a portion of the contents of these sewers is deposited in the immediate vicinity of the mouth of the influent pipe.

The reservoirs were next visited. The water in them was muddy turbid, and to say the least uninviting in appearance. The walls of the reservoirs, some five feet of water having been let out in the morning, showed a crust of from one to three inches of mud, in many places mixed with green fungous masses.

Proceeding to Beck's run, which empties into the Monongahela about a mile above the pumping station, your Committee found that the people living along this run, with an utter disregard for the health of others, have many of their privy wells so constructed as to drain directly into the run. The drippings from the animals in their stables are carried off through the same channel.

The water laden with animal matter that flows into this run from a schindery, affords excellent pabulum for the development of any disease germs that from other sources may find their way into this stream.

Your Committee being informed that typhoid fever was prevalent along this run, and in territory contiguous to and draining into it,

but outside the City limits, made an investigation with the following result :

Since August 1st there have been 14 cases of typhoid fever on Beck's run, and on Heslauch run and the territory draining into it (all of which empty into Beck's run,) there have been 42 cases of typhoid fever, developing as near as can be ascertained about as follows :

August 1st to 15th, 2 cases.

September 1st, 2 cases.

October 1st to 15th, 14 cases.

October 15th to 31st, 5 cases.

November 1st to 15th, 19 cases.

December 1st to 15th, 14 cases.

Total, 56 cases, and of these five died. By comparing the returns of typhoid fever cases from the South Side with the statement given above, it will be seen that they follow closely on the development of the cases in this territory.

About November 15th, the time at which the greatest number of cases existed in this locality, there were slight rains, sufficient to wash the surface of the ground and increase somewhat the volume of water in the run. In from 10 to 12 days from this time the disease spread with fearful rapidity on the South Side.

Has this been the source of contamination? The concurrence of dates would seem to prove it. In further support of the probability of this being the source of infection, let us quote the opinion of Dr. H. R. O'Connor, who attended about one-half of these cases. He says : "The people on Beck's run who had the fever, drained their cess-pools into the run. The people living in the locality drained by Heslauch's run, and who had the fever, cleaned their cess-pools and used the contents for fertilizing purposes. The rain we had just before the epidemic started, washed the excrement from these typhoid fever patients down to the river, thus causing an epidemic in the City."

The filth poured into the river from Beck's Run and the 30th street sewer is not by any means the only source of contamination. Lining the banks of the river for sixteen miles are the 14th, 22nd and 23rd wards of this City, and the towns of Homestead, Braddock, and McKeesport, with an aggregate population of from 40,000 to 60,000 people. The sewage from the towns mentioned is continually flowing into the river.

As a remedy, would the extension of the influent pipe of the Monongahela Water Co.'s Works, from the eddy to the channel, afford relief and render the water supply safe? In the judgment of your Committee it would not, for the following reasons: The distance from the towns mentioned to the influent pipe is not sufficient for purification to take place as it flows down, and especially is it insufficient in a sluggish stream like the Monongahela, laden at all times with large quantities of organic matter and obstructed by dams.

Further, the whole pool from which the water is drawn, is polluted by the flow from the large sewers on South 20th and 27th streets, and by the drainage from a part of the 13th, 14th, 22d and 23d wards, which pours into the pool at a point directly opposite to, or above the influent pipe. The obstruction created by the dam causes a deposit of organic matter even in the channel and far up the pool.

The wells now being sunk by the Company, if they should prove sufficient for supply, will not in our judgment prove remedial.

If the water flows from the river, the filter thus formed will remove much of the organic matter, but the water laden with germs of disease will still be unsafe. If the flow should be toward the river, it will carry with it the drainage from the innumerable cess-pools immediately above.

We are firmly of the opinion that water supplied from the Monongahela river, within twenty or twenty-five miles of the City, is now and will continue to be a constant menace to the health and lives of the citizens of the South Side.

Your Committee is informed that typhoid fever has been prevailing more or less at McKeesport during the summer, and we are not entirely clear that the germs of the earliest cases on the South Side were not derived from that source.

For years the death rate on the South Side has been abnormally large. Epidemics attack them with great frequency and virulence, and the percentage of deaths from infectious diseases as compared with other sections of the City has been shamefully, if not criminally large. In proof of these assertions, we submit the following table compiled from the records of the Board of Health.

Table submitted as part of this report and marked Exhibit "E."



## EXHIBIT "E."

Population of South Side, 27 per cent. of entire population of City. Average for 11 years :

Percentage of Mortality from Infectious Diseases on Total Mortality of District.				Percentage of Deaths from Infectious Diseases.	Per cent. of Total Mortality
Year.....	Old City....	East End...	South Side.	South Side.	South Side.
1876	18.8	17.6	24.5	38.2	32.0
1877	27.7	17.7	44.7	48.8	36.0
1878	28.1	20.4	41.1	43.2	33.4
1879	22.8	24.3	34.4	41.3	32.8
1880	22.5	28.5	37.9	43.1	33.4
1881	31.6	33.0	34.5	33.9	32.4
1882	23.5	24.0	27.8	34.3	30.8
1883	16.2	14.9	22.5	41.2	32.6
1884	12.7	16.6	26.7	48.9	36.5
1885	17.3	18.2	22.5	37.1	31.7
1886	16.0	21.1	24.4	39.4	33.2
Total .....	21.56	21.48	31.0	40.8	33.1

This table shows that for a period of 11 years from January 1st, 1876 to December 31st, 1886, the percentage of mortality from infectious diseases on the total mortality of the district has been as follows:—*Old City*, 21.56; *East End*, 21.48; *South Side*, 31.00. Percentage of deaths from infectious diseases *South Side*, 40.8 per cent. of total death rate of City from infectious diseases. Per cent. of total mortality *South Side*, 33.1. In other words, the percentage of mortality from infectious diseases on the total mortality has been for 11 years 9.5 per cent. greater on the South Side than in the other districts of the City. The South Side contains 27 per cent. of the population of the City, but for 11 years it has averaged about 41 per cent. of all the deaths from infectious diseases occurring in the City, or 14 per cent. more than its just proportion. During the same period it has had over 33 per cent. of all the deaths occurring in the City or 6 per cent. more than its proper ratio.

Since the 1st day of January, 1887 to date, 2,037 cases of typhoid fever have been reported to the Board. Of these, 278 occurred in

the Old City, 406 in the East End, and 1,353 or 66 per cent. of the whole number on the South Side.

This may be partly due to the character of the soil on the hill sides, causing frequent overflowing of the privy wells. It may be partly due to the many old wells that years ago were filled up without being cleaned, but there is no doubt in our minds that the character of the water supply is, and has been largely responsible for this unhappy condition of affairs.

A continuation of such a water supply for twenty years to come, with the yearly increase of contamination that in the nature or character of the surroundings is inevitable, means to the South Side and to the City at large, leaving out all sentiment and taking only a business view of it, a great loss in production on account of sickness and disability. It means a great loss in the increase of wealth that would accrue from this production.

It means thousands of deaths, the money value of which, if added to the loss in production, would be more than sufficient to procure a good water supply, if it had to be brought an hundred miles.

Let us analyze this assertion and see if it be correct:

The death rate on the South Side is 6 per cent. of the total death rate greater than that of the balance of the City. With the present population of the South Side, that means one death per annum for every 170 inhabitants over and above the death-rate in the rest of the City, or 260 deaths per annum more than their just percentage.

The cash value of a human life to a community has often been computed, and it is a moderate estimate to average the lives lost at \$1,275.00—260 lives lost worth \$1,275.00 each is \$331,500. Burial expenses, \$50 each, is \$13,000. But as for every death, there are many ill who recover, let us as an average place the death-rate at 10 per cent. That would mean 2,600 people ill. The average time that they would be compelled to remain unemployed or unproductive would be about 30 days. This would give us 78,000 days lost time. From this let us deduct 15 per cent. for those below the productive period of life, and we have 66,300 days labor lost. Placing the average value of a day's work at \$1.25, we have a loss of \$82,875. Add  $\frac{1}{4}$  to this for time lost by others in or money paid out for nursing, 31 cents per day, which is a moderate estimate, amounts to \$20,718. Add two dollars to each case for medicine, which amounts to \$5,200



Let us now add, as the value of the product of the labor or the increase of wealth accruing therefrom, and it is a low estimate to place it at one-third of the days' wages, or 42 cents per day. This amounts to \$27,625, and sums up as follows :

260 Lives @ \$1,275.00.....	\$331,500
260 Funerals @ \$50.00.....	13,000
66,300 Days work @ \$1.25.....	82,875
$\frac{1}{3}$ of this or 16,575 days @ \$1.25—time lost in or paid for nursing.....	20,718
2,600 cases @ \$2.00 each for medicine.....	5,200
Wealth accruing from product of labor estimated at $\frac{1}{3}$ of the days wages	27,625
Total.....	\$480,918

The approximate loss to the South Side is thus seen to be about \$481,000 more than its just proportion. Twenty-five per cent. of the amount thus lost would, if properly invested for sanitary purposes, be sufficient to reduce the death-rate of the whole City very materially; and if the whole amount thus lost were invested for a few years in improving the water supply, it would be sufficient to bring it 100 miles, if that were necessary. The loss is sufficient to pay for the entire plant of the Monongahela Water Co., in five years, valuing the plant at \$2,500,000.

This annual loss to the South Side is more than the City is willing to pay in twenty-five years for purposes of protection, judging from the meagre appropriations for sanitary purposes in the past.

As to the water supplied from wells on the South Side, your Committee would say that well water in a densely populated district is always open to suspicion, and is generally dangerous. But so far as the wells on the South Side are concerned, the water from them looks better, smells better, tastes better, and if it is not better it certainly cannot be much worse than that supplied by the Monongahela Water Co.

In our judgment, therefore, it would be impolitic to close these wells at the present time.

The only feasible remedy that appears to your Committee is to have the water from the Pittsburgh Water Works supplied to the South Side.

The connection once made it would be economy for the City to purchase the plant of the Monongahela Water Co. at any reasonable

price, and shut off the supply from the Monongahela river at once and forever.

Respectfully Submitted,

J. C. DUNN,  
JAMES McCANN, } Committee.  
CROSBY GRAY, }

### EXHIBIT "A."

PITTSBURGH, Dec. 22d, 1887.

*To the Board of Health of the City of Pittsburgh.*

GENTLEMEN:—I herewith submit a report of the six analyses of water you ordered to be made December 12th, 1887.

All statements in this schedule are based upon 1000 ccm, or one liter.

Determinations.	South Side Reservoir No. 1.	South Side Reservoir No. 2.	Monongahela River Infl. Pipe	South Side Hydrant.	31st Ward Tank	Old City Hydrant.
Total Solids.....	0.0844	0.1690	0.0952	0.1620	0.1482	0.1200
Organic Matter.	0.0338	0.0370	0.0292	0.0620	0.0318	0.0316
Cl—Chlorine.....	0.0195	0.0177	0.0179	0.0179	0.0213	0.0106
SO						
Sulphuric Acid	0.0446	0.0484	0.0441	0.0504	0.0523	0.0094
N <sup>2</sup> O <sub>3</sub>						
Nitrous Acid..	0.0010	0.0012	0.0009	0.0015	0.0012	Traces.
N <sup>2</sup> O <sub>5</sub>						
Nitric Acid ...	0.0028	0.0028	0.0022	0.0030	0.0029	Traces.
NH <sub>3</sub>						
Free Ammonia.	0.000105	0.000154	0.000153	0.000125	0.000215	0.00003
Albuminoid						
Ammonia .....	0.00011	0.00010	0.00039	0.00027	0.00018	0.00014
Temporary						
Hardness .....	2.6	2.6	2.5	2.6	2.75	1.5

The hardness of the water is calculated upon 100,000 ccm containing 1 gramm of oxide of lime (CAO) or its equivalent in oxide of magnesium (or the sulphates of both).

Permanent hardness is from  $\frac{1}{4}$  to  $\frac{1}{2}$  a degree less than the temporary hardness.

In calculating hardness after the French method, that is 1 gramm of carbonate of calcium or its equivalent in carbonate of magnesium in 100,000 ccm, we had to augment the degrees in the proportion 1: 1.785 (French) or—

Temporary Hardness .....	4.64	4.64	4.46	4.64	4.90	2.67
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From the statement of the hardness, we are permitted to calculate that oxide of lime or its equivalent of magnesia is present in 1000 ccm. of water;

Reservoir No. 1	Reservoir No. 2	Monongahela River	South Side Hydrant.	31st Ward Tank.	Old City Hydrant.
0.026	0.026	0.025	0.026	0.027	0.015

The following schedule showing the maximum of contents, permitted in good drinking water will serve best to judge of the above analyzed water.

The schedule is taken from the statement of several well known authorities, as Pettenkofer, Fisher, Reichardt, committees on water of Vienna, etc.

Total solids in 1,000 ccm. of water not over.....	0.500	grms
Organic matter in 1,000 ccm. of water not over.....	0.050	"
Nitric acid " " " " " " .....	0.027	"
Chlorine " " " " " " .....	0.0355	"
Sulphuric acid " " " " " " .....	0.100	"
Lime " " " " " " .....	0.112	"

The hardness of water may not surpass 16.5. From this we may learn that the water from the Old City hydrant is quite normal, while we find that the South Side water (taken next to a house where a sick person—typhoid malaria—had lived,) is too high in organic matter (0.062).

The quantity of nitrous and nitric acid present in the South Side water points toward danger.

The most dangerous constituents of the water are the free ammonia and the albuminoid ammonia. As long as the free ammonia is in the water, as it is in the Old City hydrant water, it may be taken with impunity, but its presence in the Monongahela water warns us to abstain from it

The presence of albuminoid ammonia shows that the Old City hydrant water is also of a dangerous nature.

If we remember that nitrites and albuminoid matter are directly due to sewage contamination, we cannot do otherwise than regard the water of the Monongahela river, by passage through the two reservoirs and the 31st Ward tank, as unhealthy.

Very respectfully,

HUGO BLANCK.

## EXHIBIT "B."

PITTSBURGH, Dec. 21st, 1887.

*To the Board of Health.*

GENTLEMEN:—We enclose you a tabulated report of analyses of the samples of water which we have made.

We would say further, that the samples of water taken from the South Side are, as proven by these analyses, very impure and totally unfit for drinking purposes. The best authorities say that potable waters, to be used by large communities, should not contain, in parts per hundred thousand, more than 10 parts of total solids, not over .01 parts of free ammonia; not over .01 parts of albuminoid ammonia; not over 1 part of chlorine, nor .009 parts of nitrogen existing as nitrites and nitrates. The hardness of the water should not be over 8 degrees.

We do not mean to say that water containing an excess of any one of these ingredients in its analysis would be necessarily unfit for drinking purposes, but that samples of water which exceed in all, or most of these constituents, would be considered dangerous for use. Further, we would not state that the amount of ammonia and chlorine found in the water, which are in proportions very minute, are themselves the poisonous elements in the water, but simply that they are indicators of sewage contaminations, and when the proportions given above are exceeded it is a sure indication that the water is contaminated with sewage or decomposing organic matter which is very poisonous and deleterious to health.

The amount of sulphuric acid in the samples of the Monongahela water, also, is very abnormal, and is of itself a very poisonous element in the water.

It is difficult, in fact it is impossible, in a water analysis, to state upon any one ingredient that because of its percentage the water is necessarily good or bad. The results have to be judged together in order to form an intelligent opinion of the matter. The results of the analyses of all the constituents of each of the samples of water taken on the South Side, taken as a whole, prove the water to be in a very dangerous condition for potable purposes.

Very respectfully,

PITTSBURGH TESTING LABORATORY,

HUNT & CLAPP.

# EXHIBIT "B."

Report of Tests made for the Board of Health, Pittsburgh, December 21st, 1887.

*Results of Analyses of seven samples of water, in parts per 100,000.*

DETERMINATIONS.	Sample No. 1	Sample No. 2	Sample No. 3	Sample No. 4	Sample No. 5	Sample No. 6	Sample No. 7
	South Side Hydrant.	South Side Reservoir No. 1.	South Side Reservoir No. 2.	31st Ward Tank.	Hydrant of Mr. Dixon 31st Ward.	Monongahela River In-fluent Pipe.	Old City Hydrant.
Total Solids.....	13.4	18.8	15.7	15.5	15.2	14.3	8.6
Organic Matter.....	3.6	4.8	3.0	5.0	4.6	2.8	2.6
Fixed Solids.....	9.8	14.0	12.7	10.5	10.6	11.5	6.0
Free Ammonia.....	0.026	0.0222	0.0268	0.0186	0.019	0.0202	0.0174
Albuminoid Ammonia.....	0.0294	0.0266	0.019	0.0166	0.0168	0.0246	0.017
Chlorine.....	1.134	1.260	1.066	0.995	1.000	0.775	0.78
Sulphuric Acid.....	5.068	5.084	5.30	5.672	5.356	5.436	1.218
Nitric Acid.....	0.093	0.083	0.102	0.056	0.081	0.083	0.129
Nitrous Acid.....	None.	None.	None.	None.	None.	None.	None.
Hardness.....	7.129	6.879	6.860	6.492	6.410	6.492	3.021

Traces of Iron and Magnesia in all the samples. No. 7 contained the most Iron. The solids mostly Carbonate and Sulphate of Lime.

Very respectfully,

PITTSBURGH TESTING LABORATORY,

HUNT & CLAPP.

## EXHIBIT "C."

PITTSBURGH, Dec. 21st, 1887.

*To the Board of Health :*

GENTLEMEN,—In response to your request, I beg leave to submit the following as the result of my microscopic analyses of the Monongahela and Allegheny river water.

1. Sample from South Side hydrant or tap in constant use. Bacteria in swarms, excrement and epithelium, vegetable fibres, granular sediment, mineral crystals.

2. Sample from river channel near mouth of influent pipe. Bacteria in large quantity, granular and crystalline matters, excrementitious matter, epithelium, infusoria, some dead, in small number, wood fibres.

3. Eastern reservoir or No. 1 one sample. Bacteria in large quantity, excrementitious matters, epithelium, wood fibres, long filiform growths, springing from excrementitious debris.

4. Western reservoir No. 2, one sample. Bacteria in large quantity, excrementitious masses, epithelium, vegetable fibres, crystalline substances, dark fungus or mineral substances found in both pools.

5. Thirty-first Ward tank. Bacteria in considerable numbers, excrementitious debris, epithelium, single and in masses. Some small dead fish were observed floating in the tank.

6. Sample from Old City hydrant. Bacteria, vegetable fibres, crystals, etc.

By reference to the accompanying drawings it will be at once seen how generally these bacteria are diffused. By comparing the proper drawings it will also be seen that the germs in the water appear in the stools of the typhoid patient. The specific germs which it is believed hold a causal relation to typhoid fever, could not be identified if present without prolonged culture experiments.

The presence of non-specific bacteria, not to mention other forms of contamination, would favorably condition the spread of this epidemic.

By way of explanation I would add that the bacteria are depicted in the drawings on a large scale, and in consequence greatly reduced in number. They represent sketches taken from aërial images of these micro-organisms viewed through a one-fifth objective and

---

B eye piece with Camera Lucida attached, the images thus formed being cast so to speak against a wall of the room at a distance of a number of feet.

Very respectfully,

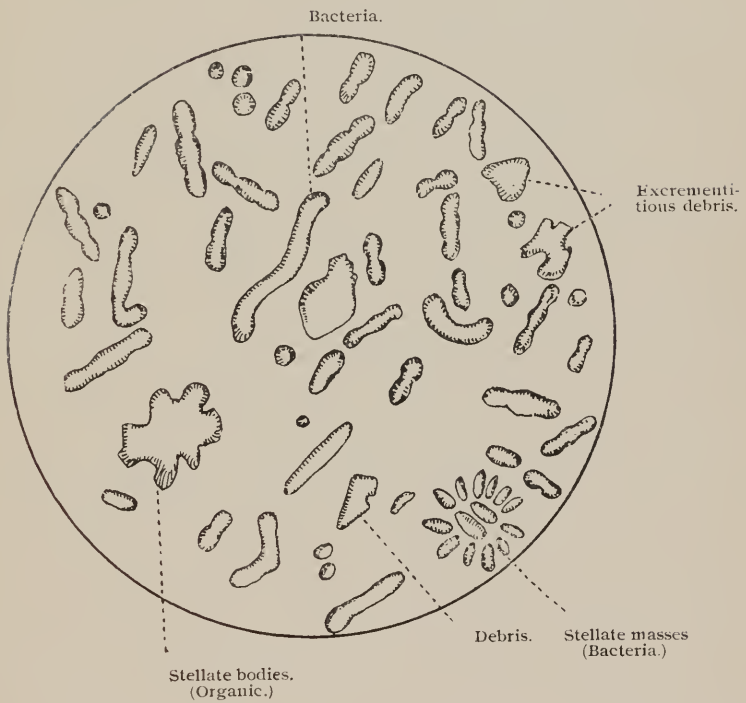
E. A. MUNDORFF.





## Plate I.

Thursday, December 15, River channel.



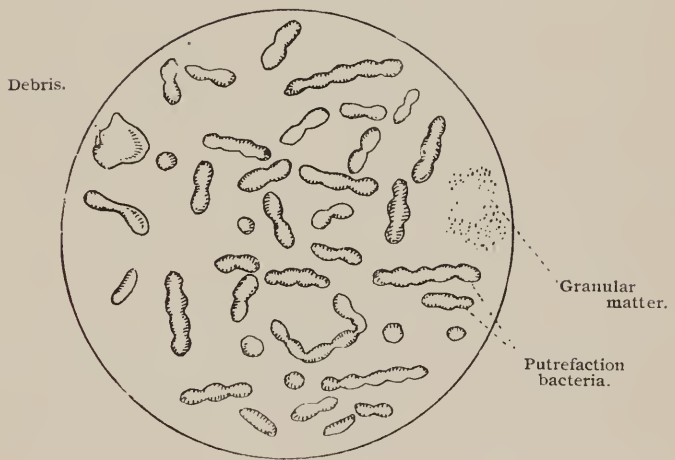
Very high power.

E. A. MUNDORFF.



## Plate 2.

Monongahela river influent pipe. Depth 8 ft. 10 in.



Very high power.

E. A. MUNDORFF.



# Plate 3.

Eastern Reservoir.

Putrefac-  
tion  
bacteria



Organic  
debris.

Putrefaction bacteria.

Organic debris.

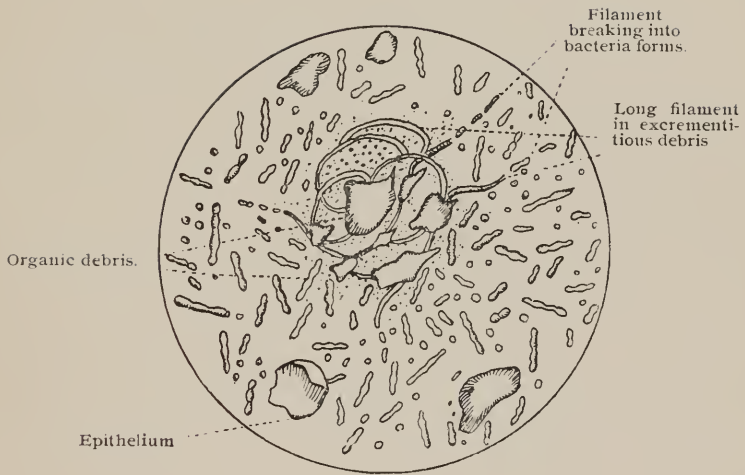
Very high power.

E. A. MUNDORFF.



# Plate 4.

Eastern reservoir.



Lower power.

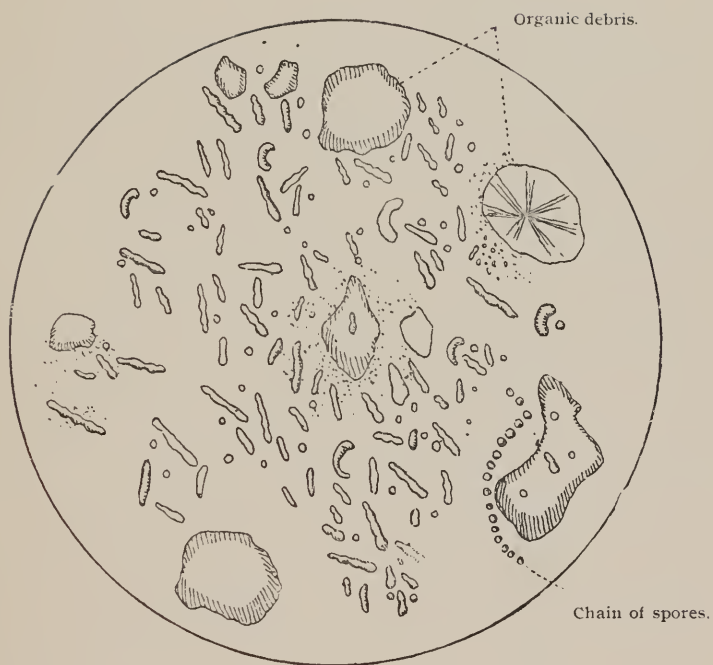
E. A. MUNDORFF.





# Plate 5.

Western Reservoir.



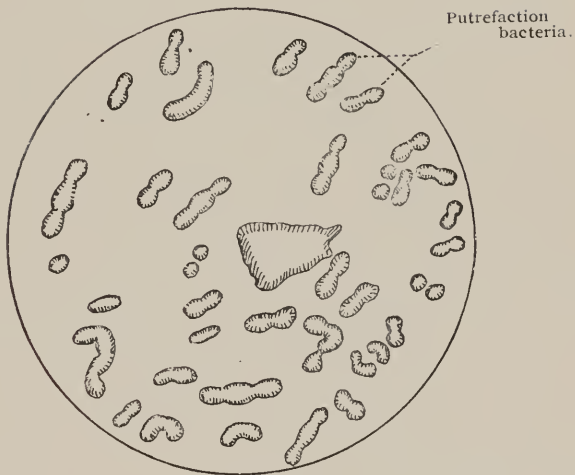
Lower power.

E. A. MUNDORFF.



# Plate 6.

South Side Hydrant, Dec. 14.



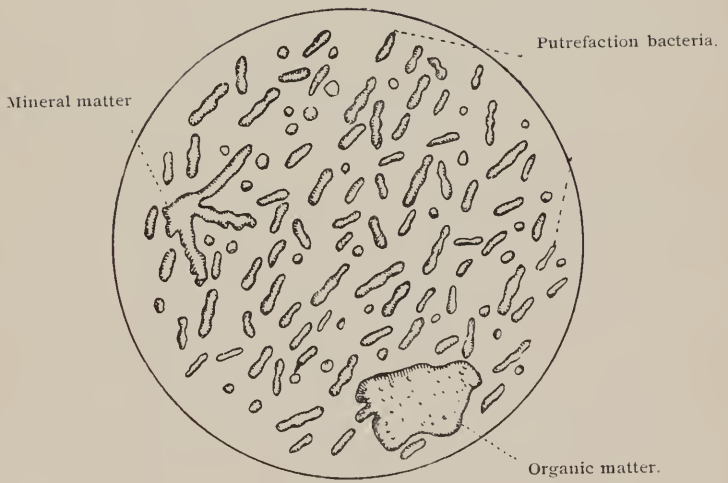
Very high power.

E. A. MUNDORFF.



Plate 7.

Thirty-first ward tank.



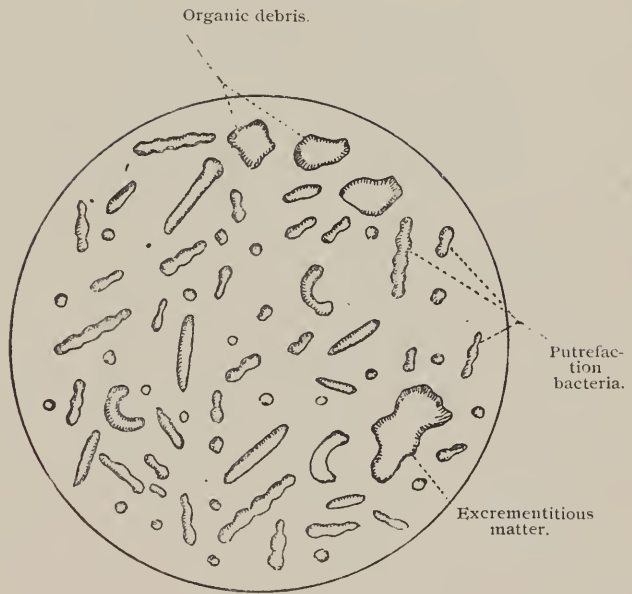
High power.

E. A. MUNDORFF.



Plate 8.

Fresh Typhoid stool.



Very high power.

E. A. MUNDORFF.





## EXHIBIT "D."

PITTSBURGH, Dec. 20th, 1887.

*To the Board of Health:*

GENTLEMEN,—Herewith please find results of microscopical examination of six samples of river water as ordered by you last week.

Nos. 1 to 5 were taken by the Inspector detailed by you for that purpose and myself. They are fair average samples of South Side river water in its present condition. No. 6 was taken by myself, and is a fair sample of Old City hydrant water.

In all six samples there was little difference as to clearness, and to the casual observer the water would appear pure and wholesome. However, when held up to the light, innumerable minute particles could be seen suspended in the fluid. These consist of earthly particles and granular aggregations of organic matter, much of which is presumably the finely comminuted remains of the contents of sewers and other refuse thrown into the river.

Occasionally a few minute specks moving hither and thither would indicate the presence of infusorial life. After standing five days an exceedingly thin deposit of suspended solid matter was formed at the bottom of each jar.

The contents of each jar were examined in three different ways, each of which has value in supplying additional data or verifying those already found.

1. A drop taken from the centre of each jar was carefully examined. Bacteria, particles of organic matter, and infusoria were easily found, thus indicating their presence in unusual numbers.

2. Some of the thin deposit at the bottom of each jar was carefully examined. Bacteria, infusoria, organic matter, and sporular forms of life, both animal and vegetable, were found in still greater abundance.

3 Drops taken from the centre of each jar were evaporated on clean slips of glass. Crystalline mineral matter held in solution is thus detected; and furthermore, all the bacteria are obtained in one single layer, so that it becomes reasonably easy to form an accurate estimate as to their number. They are also much more plainly seen by this method.

A drop of water so evaporated forms a round or oval film three-eighths to one-half inch in diameter, and is plainly visible to the naked eye, provided there is sufficient matter in solution. This was the case with all the samples and indicated an excess of soluble matter. Absolutely pure water would dry up and leave no trace whatever.

As the power used in examining these films could show only  $\frac{1}{300}$  to  $\frac{1}{250}$  of the whole area at a time, each film required the scanning of at least 250 separate areas or fields before its examination was complete. In each area examined the number of bacteria and micrococci averaged not less than 100, and sometimes was as high as 10,000. Taking the lower number each drop must have contained 25,000 of microbes.

It took 80 drops to fill a dram, and as an ordinary glass of water contains 64 drams or more, each drinker of unboiled South Side river water must have been gulping down bacteria at the rate of 125,000,000 per glass. This number placed side by side would form a film covering only 1 inch by 2 inches, so it will be readily seen that an ordinary glass is far from being crowded with so vast a multitude.

Whether bacteria are concerned in the epidemic of typhoid fever or not, it is very clear that our rivers are being badly polluted, and that all possible means should be taken to prevent it.

#### SAMPLE NO. 1.

Taken about 12 inches above bottom of Monongahela river, at influent pipe, Thirtieth street, South Side, several forms of infusoria, among which was *lyncrypta*, *bacteria* and *micrococci*, very numerous.

Evaporation yields dirty, yellow crystals in leaf-like expansions from margin of drop, besides isolated rosettes, and square forms of the same. Another soluble substance solidified in round or oblong discs, or in masses with rounded or crenulated margins.

Granular matter also present in small masses, and appears to consist of debris of animal and vegetable origin.

**SAMPLE NO. 2.**

Taken from receiving compartment of reservoir at Thirtieth street, South Side. Water taken from surface, and about twelve feet out from sides of basin.

*Bacteria, micrococci*, a few simple forms of *infusoria*. Crystals and other matter the same as in No. 1.

**SAMPLE No. 3.**

Taken from surface of distributing compartment a few feet out from sides of basin, at Thirtieth street, South Side.

*Bacteria, micrococci*, a few simple *infusoria* crystals and deposits as above.

In the sediment from this sample, two small but very active forms of *amoeba* were observed.

**SAMPLE No. 4.**

Taken from a hydrant at 12th street, just above Carson street, South Side.

*Bacteria, micrococci*, a few *infusoria*; also crystals and deposits as above.

**SAMPLE No. 5.**

Taken from 31st Ward tank, South Side.

*Bacteria, micrococci*, and simple forms of *infusoria*. Crystals and deposits the same as before. In the sediment of this sample the mycelium of a fungus was observed.

**SAMPLE No. 6.**

Taken from hydrant on Penn avenue, near Sixth street, Old City.

*Bacteria, micrococci*, a few simple forms of *infusoria*. Crystals like those of South Side water, but not in rosettes, and lighter in color. Crystalline matter with crenulated margin also present. If anything, bacteria and mineral matter somewhat less than in South Side water. Some *diatoms* and a beautiful species of *vorticella* were also obtained.

Yours very truly,

JAMES H. LOGAN.







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